FINAL ENVIRONMENTAL IMPACT STATEMENT

Grand Junction District Office
764 Horizon Drive
Grand Junction, Colorado 81501

June 15, 1983

Enclosed for your review is the final environmental impact statement (FEIS) on the Glenwood Springs Resource Management Plan. This document is one of the first BLM environmental impact statements that analyzes the impacts of managing all the public land resources together rather than singley. This FEIS contains the proposed resource management plan, hereinafter referred to as the Proposed Plan. The Proposed Plan is a refinement of the Preferred Alternative presented in the draft environmental impact statement (DEIS) published in November 1982. The Proposed Plan is the BLM's proposed action.

With the exception of certain wilderness recommendations, all parts of this Proposed Plan may be protested. Protests should be sent to the BLM Colorado State Director, 1037 20th Street, Denver, Colorado 80202, prior to July 23, 1983—the end of the 30-day protest period—and should include the following information:

- The name, mailing address, telephone number, and interest of the person filing the protest.
- A statement of the issue or issues being protested.
- A statement of the part or parts being protested.
- A copy of all documents addressing the issue or issues that were submitted during the planning process by the protesting party or an indication of the date the issue or issues were discussed for the records.
- A short concise statement explaining why the BLM Grand Junction District Manager's decision is wrong.

At the end of the 30-day protest period, the Proposed Plan, excluding any portions under protest, shall become final. Approval shall be withheld on any portion of the plan under protest until final action has been completed on such protest. The approval process and the final resource management plan will be published with the record of decision in October 1983.

Sincerely,

David G. Jones

District Manager

FINAL ENVIRONMENTAL STATEMENT
ON THE
GLENWOOD SPRINGS RESOURCE MANAGEMENT PLAN

Prepared by
Bureau of Land Management
U. S. Department of the Interior

DISTRICT MANAGER
GRAND JUNCTION DISTRICT OFFICE

I concur:

STATE DIRECTOR
COLORADO STATE OFFICE

ENVIRONMENTAL IMPACT STATEMENT

Draft ( ) Final (X)

GLENWOOD SPRINGS RESOURCE AREA
GLENWOOD SPRINGS, COLORADO

Lead Agency

U. S. Department of the Interior, Bureau of Land Management

Type of Action

Administrative (X) Legislative ( )

ABSTRACT

This final environmental impact statement (FEIS) describes and analyzes the Proposed Resource Management Plan for the Glenwood Springs Resource Area. It was developed following a 90-day review of the draft environmental impact statement (DEIS), which described and analyzed four alternatives for managing the Glenwood Springs Resource Area. The final resource management plan will be published with the record of decision in October 1983.

For further information regarding this environmental impact statement:

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Glenwood Springs Resource Area
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Glenwood Springs, Colorado 81602
Telephone: (303) 945-2341

Date by which Protests Must Be Received: July 23, 1983

DISTRIBUTION LIST

The following agencies and interest groups have been sent copies of the final environmental impact statement.

Federal Agencies

Department of the Interior
- Bureau of Reclamation
- Fish and Wildlife Service
- Geological Survey
- Minerals Management Service
- National Park Service
- Office of Surface Mining

Department of Agriculture
- Forest Service
- Soil Conservation Service

Department of Energy

Environmental Protection Agency

Colorado State Agencies

Colorado Division of Planning-State Clearing House (Distributes to all State Agencies)

State Historic Preservation Officer

Local Government

Associated Governments of Northwestern Colorado

Eagle, Garfield, Mesa, Pitkin, Rio Blanco, and Routt County Commissioners and Planning Departments

Cities and Towns of of Aspen, Basalt, Carbondale, DeBeque, Eagle, Glenwood Springs, Gypsum, New Castle, Rifle, Parachute, Silt, and Snowmass Village.

Other Organizations

Advisory Council on Historic Preservation

Aspen Board of Realtors

American Petroleum Institute

Club 20

Colorado Association of Soil Conservation Districts

Colorado Association of 4-Wheel Drive Clubs

Colorado Cattlemen's Association

Colorado Dude and Guest Ranch Association

Colorado Farm Bureau

Colorado Guides and Outfitters Association

Colorado Mining Association

Colorado Open Space Council

Colorado School of Mines

Colorado State University

Colorado Wool Growers Association

Independent Petroleum Association of Mountain States

League of Women Voters

National Audubon Society

Rocky Mountain Oil and Gas Association

Sierra Club

The Wilderness Society

Trout Unlimited

University of Colorado

Upper Colorado Board of Realtors

Western Slope Snowmobile Club

Numerous organizations and individuals expressing interest also have been sent copies of this final environmental impact statement.

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HOW TO USE THIS DOCUMENT

This is the final environmental impact statement (FEIS) on the Glenwood Springs Resource Management Plan. The draft environmental impact statement (DEIS), consisting of a volume of narrative and a map addendum, was sent to you earlier. This FEIS consists of a Summary, a Description of the Proposed Plan, Affected Environment, Environmental Consequences of the Proposed Plan, Public Comments, Errata for DEIS Material Not Reprinted, Comment Letters, Glossary, and Literature Cited.

This FEIS incorporates by reference the draft map addendum and the following parts of the DEIS:

Chapter 1, Introduction

- The Planning Process
- Interrelationships

Chapter 3, Alternatives

- General Criteria Used to Formulate Alternatives
- Capability Units
- Management Philosophy of Continuation of Current Management, Resource Protection, Economic Development, and Preferred Alternatives
- Descriptions of the Continuation of Current Management, Resource Protection, Economic Development, and Preferred Alternatives
- Comparative Analysis of the Continuation of Current Management, Resource Protection, and Economic Development Alternatives
- Alternatives Considered but Eliminated from Detailed Study

Environmental Consequences

- Continuation of Current Management Impacts
- Resource Protection Impacts
- Economic Development Impacts
- Preferred Alternative Impacts

Appendixes A, C, D, E, F, H, I, J, K

Together, the DEIS, the draft map addendum, and this document constitute the final environmental impact statement.

The Proposed Plan in this FEIS is a modified version of the Preferred Alternative presented in the DEIS. To aid in comparing the two alternatives, arrows (→) have been placed in the margins in Chapter 3 and on the maps in the back of this document to indicate changes to the DEIS.

SUMMARY

Actions are proposed in this final environmental impact statement (FEIS) to resolve issues that were identified throughout the planning process. Summarized below are the issues that were identified, the actions proposed to resolve the issues, and the effects of implementing the proposed actions.

Table 1. Summary Table

Issues	Proposed Actions	Effects
Air Quality Management		
How will the Clean Air Act, air quality classifications, and other federal and state legislation affect development on public land and adjacent private land (Chap. 5)?	Existing air quality would be monitored to establish a baseline by which to measure air quality changes associated with BLM proposals. All projects would be required to meet applicable local, state, and federal regulations designed to limit air quality degradation.	Existing air quality in this resource area would not be degraded by actions proposed in this plan.
Water Quality Management		
Which public land should the BLM manage to maintain or enhance water quality (Chap. 3)?	Four areas would be investigated to identify the origins of existing water quality problems. Actions would be taken to improve the problems originating on public land. Water quality in other areas would be maintained through mitigation measures included in other resource program proposals (Map 3-1).	Depending on the source of water quality problems in the four areas and whether problems could be corrected, management would likely improve water quality in the problem areas. Beneficial impacts would probably be minor in major tributaries such as the Eagle and Colorado Rivers. Water quality would be maintained on public land in other areas through the inclusion of mitigation measures in other resource projects.
Water Yield Management		
Which public land should the BLM manage to maintain or enhance water yield (Chap. 3)?	Water yield objectives would be achieved by designing into forestry, livestock grazing, and wildlife habitat projects, wherever possible, actions to increase water yield. A water yield experiment designed to measure the water yield benefits from aspen cutting would be conducted on the Naval Oil Shale Reserve near Rifle, Colorado (Map 3-2).	All vegetation manipulation proposals would probably increase water yield by about 285 to 1,760 acre-feet per year after 5 years of implementation, a relatively small increase. The additional yield would provide additional water to the numerous small stockponds and reservoirs in the resource area and might prolong the flow of streams or intermittent streams. The additional yield would specifically benefit livestock and wildlife in the resource area but would not generally benefit the Colorado River Basin as a whole.
Critical Watershed Areas		
Which public land should be managed to protect critical watershed values (Chap. 3)?	Measures would be taken to protect critical watersheds (municipal watersheds, debris flow hazard zones, and erosion hazard areas) from damage caused by motorized vehicle use, vegetation manipulations, timber management, mineral development, fire, livestock grazing, and utility development. In addition, the debris flow hazard zones adjacent to Glenwood Springs would be designated as an area of critical environmental concern (ACEC) providing for special management proposals in addition to those proposed in the Glenwood Springs Debris Flow Study (Map 3-3).	The water quality in the municipal watersheds of New Castle and Rifle would be maintained. Debris flowing into the town of Glenwood Springs would be reduced, and increased erosion in high erosion hazard areas would be prevented.

Minerals Management 1. Which public land should remain open to mineral exploration and development (Chap. 3)? 2. Which lands containing federally-administered coal should be considered suitable for coal leasing and development (Chap. 3)?	Land currently withdrawn for other uses or to protect unique resource values would continue to be withdrawn. Existing constraints placed on mineral activities by other resources would also continue. Additional constraints would be placed upon mineral activities to protect high value recreation resources, wilderness resources, and critical watersheds. Land not closed or restricted to mineral location, leasing, or sales would be open for mineral development. Approximately 28,520 acres in the Grand Hogback Coal Field would be designated as acceptable for further consideration for coal leasing. This would be the first step in the BLM coal leasing process (Map 3-4).	Closing 56,430 acres of public land to mineral location, 42,344 acres to location of surface facilities for oil and gas, 10,738 acres to oil and gas leasing, and 16,534 acres to mineral sales would reduce by a like amount the number of acres available for exploration and development. These reductions could adversely affect the minerals industry in the long term if demands for these resources increase significantly. Valuable resources such as wilderness, recreation, public water reserves, municipal watersheds, water quality, and scenery would be protected. A total of 509,612 acres would be potentially available for mineral location, 555,304 acres for oil and gas leasing, and 549,508 acres for mineral sales.
Aquatic Habitat Management 1. Where should BLM manage fisheries habitat on public land (Chap. 3)? 2. On what public land should the BLM request appropriation of water (Chap. 3)?	Aquatic habitat of streams having more than one half mile of continuous flow across public land and lakes surrounded by at least 40 acres of public land, which have existing or easily obtainable public access and either an existing or potential fishery, would be montored or improved. The streams and lakes not recommended for improvement would be monitored for changes in aquatic conditions. Those found to be in a declining condition would be improved as funding became available (Map 3-5). Minimum stream flows and pool levels would be requested on specified streams and lakes through the Colorado Division of Wildlife (see Table 3-3).	Improving fisheries habitat on streams and lakes could improve water quality and increase local fish populations, thus improving local fishing opportunities.
Terrestrial Habitat Management 1. Which public land should be maintained for wildlife use (Chap. 3)? 2. What levels of habitat management intensity are appropriate, and what management practices are suitable for each level (Chap. 3, FEIS, and Appendix A, DEIS)?	Initially, 46,210 animal-unit months (AUMs) of existing forage would be allocated for wildlife use. Following initial allocation, 19,840 acres of vegetation would be manipulated over a 20-year period to increase wildlife forage by 6,383 AUMs for a total projected allocation of 52,593 AUMs of wildlife forage. Habitat would be made available for the introductions of sage and sharptail grouse, turkey, peregrine falcon, and river otter. A study area would be identified for possible introduction of bighorn sheep. Livestock grazing would be prohibited on some crucial winter ranges after October 15 and on other winter and summer ranges after November 15 to reduce competition between species. A total of 9,710 acres of public land would be identified for cooperative management to benefit wildlife and administered by the Colorado Division of Wildlife (Map 3-6). Possible management practices for wildlife projects are discussed in Appendix A, DEIS.	The initial forage allocation would result in a 2.4 percent increase in big game populations throughout the resource area; however, decreases would occur in some game management units. The projected forage allocation with vegetation manipulation would result in a 16.6 percent population increase above existing numbers but would still be 9 percent short of meeting the Colorado Division of Wildlife goals. Wildlife conditions and species diversity would be maintained or improved throughout the resource area as a result of wildlife habitat projects, introduction of species, off-road vehicle restrictions, and season-of-use restrictions on livestock grazing.

Table 1. Summary Table—Continued

Issues	Proposed Actions	Effects
Livestock Grazing Management 1. Which public land should BLM manage for livestock forage production (Chap. 3)? 2. What level of management intensity should be practiced on public land managed for livestock forage production, and what management practices should be used (Chap. 3, FEIS, and Appendix A, DEIS)?	All existing grazing allotments would be managed for livestock forage production. Forty-two allotments would be managed intensively either alone or in combination with other adjacent allotments. Initially, 37,852 animal-unit months (AUMs) of existing forage would be allocated for livestock use. Following initial allocation, 27,800 acres of vegetation on 98 allotments would be manipulated over 20 years to increase livestock forage by 12,742 AUMs for a total projected livestock forage allocation of 50,594 AUMs (Map 3-7).	Initial forage allocations would result in a 1 percent increase above existing livestock use resource area wide; however, this would be a 33 percent decrease from active preference (the objective). The projected long-term allocations with vegetation manipulation would result in a 35 percent increase above existing livestock use but would still fall 11 percent short of active preference. This would result in an overall moderate adverse impact to operators wishing to graze at active preference levels. These percentages are resource area wide with some individual allotment allocations varying significantly (see Chap. 3, Table 3-6). The fall cut-off dates of October 15 and November 15 proposed by terrestrial habitat management would require permittees of the 53 allotments to acquire forage elsewhere during that period.
Forest Management 1. Which public land should BLM manage for commercial forest land and woodland (Chap. 3)? 2. What techniques should be used to harvest forest products (Appendix A, DEIS)? 3. What level of harvest should be allowed to sustain timber production (Chap. 3)?	All suitable forest land supporting commercial forest and woodland species would be managed. Major commercial species include lodgepole pine, Engelmann spruce, Douglas-fir and ponderosa pine (commercial forest land) and pinyon pine, juniper, aspen, and subalpine fir (woodland). The annual allowable harvest level would be 1.8 million board feet for commercial forest land and 6,465 cords for woodland (Map 3-8). Forest land would be managed to minimize losses to forest resources from insects and disease. Practices that would be used in managing forest land are listed in Appendix A, DEIS.	Based on current and projected market demands, the proposed available harvest of commerical forest land and woodland would provide sufficient volumes of sawtimber and fuelwood to satisfy the local timber and fuelwood industry and provide another source of wood supplies. Through the application of forest management practices, the health and growth of stands would be enhanced, thereby increasing stand productivity and yield.
Recreation Resource Management 1. What types and levels of management should be required to provide suitable recreational opportunities on public land while protecting environmental quality and eliminating conflicts with adjacent landowners (Chap. 3)? 2. What types of facilities and services should be provided to maintain suitable recreational opportunities to accommodate present and future use on public land (Chap. 3)? 3. How should resource values be allocated and managed to provide and maintain suitable recreational opportunities on public land (Chap. 3)? 4. Which natural and cultural features should be managed for recreational, scientific, and educational purposes (Chap. 3)?	Recreation opportunity spectrum classes would be adopted (Map 3-9). Existing recreational facilities would be maintained and 23 additional facilities would be developed to help accommodate both existing and future demands. Recreational access would be provided to several areas with high recreational values. Special recommendations would be implemented in Hack Lake, Deep Creek, Thompson Creek, the upper Colorado River, and Bull Gulch to protect high quality recreational values (Map 3-10).	Existing recreational settings would be maintained in most areas. Continued maintenance would prevent deterioration of existing and proposed recreational facilities. Both existing and future recreation demands would be met, and fragile recreation resource values would be protected.

Social and Economic Conditions 1. What significant social and economic impacts can be expected to result from public land and resource management decisions (Chap. 5)? 2. What social and economic needs of communities in the resource area could be addressed by BLM (Chap. 3, especially Land Tenure and Critical Watershed Areas sections; Chap. 5)?	None proposed.	The net economic impact of the Proposed Plan would be positive and small. An increase in forage available to big game could yield an eventual increase of $1 million in personal income. This is less than one half of one percent of growth resource area wide. However, this increase would be significant because it would largely occur in the traditionally slow fall period and would focus on those sectors providing services to hunters. Further income growth would be brought about by expanded sales of timber and fuelwood. Although the net change in livestock forage allocation would be minimal, several ranching operations would see significant changes in their net revenues. Sales of public land would generate up to $10.5 million in federal revenues. Community social needs could be served by providing land for sale or disposal by lease for public purposes. Negative economic impacts to the city of Glenwood Springs could be avoided through the implementation of actions in debris flow areas.
Cultural Resource Management 1. What is the value of each cultural resource, and how should these resources be protected (Chap. 3, FEIS, and Appendix A, DEIS)? 2. Which public land should receive special designation, and which designation is most appropriate (Chap. 3)? 3. What can be done to prevent loss of cultural resources (Chap. 3, FEIS, and Appendix A, DEIS)?	Selected sites identified as having high value for management would be actively managed as outlined in the Glenwood Springs Cultural Resource Management Guide. The remaining sites would be managed as prescribed by law and policy to protect cultural resource values. Approximately 4,178 acres known as the Blue Hill Archaeological District would be nominated for inclusion on the National Register of Historic Places and would be designated as a area of critical environmental concern. Project areas would be inventoried for cultural resources prior to project approval. Measures would be taken to protect any cultural resources found.	By comparing each site to the Glenwood Springs Cultural Resource Management Guide, it would be possible to determine the relative value of each site and the type of management needed to protect it. New information about past civilizations would be obtained from managing the Blue Hill Archaeological District and other high value sites. Protection from natural or man-caused deterioration would be provided to these sites through special protective measures.
Paleontological Resource Management How should important paleontological values be protected (Chap. 3)?	Projects would be inventoried for paleontological resources in areas with high paleontological value prior to project approval. Measures would be taken to protect any paleontological resources found.	Inventory of project sites prior to project approval would continue to protect paleontological resources from destruction.
Wilderness Management Which public land should be recommended to Congress as suitable for designation as wilderness (Chap. 3)?	A total of 10,118 acres would be recommended to Congress for designation as wilderness: a total of 330 acres in the Eagle Mountain Wilderness Study Area (WSA) and 10 acres in the Hack Lake WSA would be recommended under Section 202 of the *Federal Land Policy and Management Act of 1976* (FLPMA), and a total of 9,778 acres in the Bull Gulch WSA would be recommended under Section 603 of FLPMA (Map 3-11).	Approximately 10,118 acres of additional wilderness would be recommended suitable for addition to the wilderness preservation system. A total of 19,876 acres of public land identified as nonsuitable for wilderness designation would be managed for other purposes. Upon plan approval, 3,350 acres of public land in the Hack Lake WSA would be released from the wilderness review process and returned to multiple use.

Table 1. Summary Table—Continued

Issues	Proposed Actions	Effects
Areas of Critical Environmental Concern Which public land should be designated as areas of critical environmental concern (ACECs) (Chap. 3)?	Five areas would be designated as ACECs—the lower Colorado River cooperative management area, Glenwood Springs debris flow hazard zone, Deep Creek, Bull Gulch, and the Blue Hill Archaeological District—to protect important wildlife and riparian habitat, high quality scenic areas, critical watershed areas, and important archaeological values (Map 3-12).	Important and valuable resources would be protected from resource degradation in all five areas.
Visual Resource Management What type or level of management should be used to maintain or enhance the visual quality of public land consistent with multiple use management objectives (Chap. 3)?	Visual resource management (VRM) classes (Map 3-13) would be adopted. Deep Creek and Bull Gulch would be designated as areas of critical environmental concern and managed under VRM Class I objectives. Thompson Creek Natural Environment Area would also be managed under Class I objectives. Some existing Class II areas would be changed to Class III to allow for vegetation manipulations proposed by forest, livestock grazing, and wildlife management programs.	Visual quality would be maintained through the establishment of VRM classes. High value scenic quality would be maintained in Bull Gulch, Thompson Creek, and Deep Creek through special management programs.
Land Tenure Adjustments Which public land should be identified for disposal and retention (Chap. 3)?	Approximately 15,500 acres of public land would be recommended for disposal. Cooperative management would be proposed on 62,780 acres. Public land recommended for retention would total 487,762 acres (Map 3-14).	Big game populations would suffer from the disposal of 7,386 acres of public land crucial winter range. A minor insignificant loss of forest products and livestock forage would also occur. Administrative efficiency would be substantially improved by disposing of small, isolated, unmanageable parcels of public land.
Off-Road Vehicle Management Which public land should be designated open, closed, or limited to off-road vehicle (ORV) use (Chap. 3)?	Off-road vehicles would be allowed on 393,615 acres, limited on 152,001 acres, and closed on 20,426 acres of public land (Map 3-37).	In areas closed or limited to ORV use, fragile and unique resource values would be protected. Because of the large acreage proposed as open for ORV use, the loss of ORV opportunities would be insignificant.
Transportation Management Where is legal access to public land necessary or desirable (Chap. 3)?	Additional public access would be available on 41 miles of road and 48 miles of trail. Forty-eight new easements for public access would also be identified. This new access would would support other resource programs such as recreation, wildlife, and forest management (Map 3-16).	A significant amount of new legal public access would be provided to nearly all large blocks of public land. Additional legal access would open up presently inaccessible public land to resource management, thus helping to accomplish management objectives.

Utility and Communication Facility Management		
Which public land should be identified as suitable for utility and communication facility development (Chap. 3)?	A total of 20,756 acres of public land would be designated as unsuitable for the placement of utility and communication facilities. A total of 101,293 acres would be designated as sensitive, and 443,993 acres (the remainder of the public land in the resource area) would be designated as suitable for consideration (Map 3-17).	Identification of zones as unsuitable, sensitive, and suitable for consideration would help utility companies better design proposals for land use authorizations. This should help reduce processing costs and increase efficiency. Those resource values present in the unsuitable zones would be protected from adverse impacts associated with the construction and operation of utility and communication facilities.
Fire Management		
1. Which public land should be managed to reduce fire hazards (Chap. 3)? 2. Which public land would benefit from fire when used as a management tool (Chap. 3)?	A total of 31,780 acres of public land would be designated fire exclusion zones. Fire management zones would be designated on 221,440 acres, and fire suppression zones would be designated on the remaining public land (312,882 acres) (Map 3-18).	By specifying where fire is wanted and unwanted, time and money would be saved by fighting only unwanted fires. Moreover, some resources would benefit from fire as a tool to accomplish their management objectives.

CHAPTER 1

INTRODUCTION

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PURPOSE AND NEED

The purpose of the Proposed Plan in this final environmental impact statement (FEIS) is to identify what the BLM believes to be the best management approach for resolving identified resource management concerns and public issues. These concerns and issues determined the need for planning by pointing out management opportunities or problems associated with current management. The issues and proposals to address the issues are presented in the Summary section of this FEIS.

The plan proposes land use allocations, broad production goals, and restrictions on some resource programs to protect important resource values. In most cases, it does not describe or analyze all the specific actions that would be taken to implement the proposals. Some specific actions will be described and analyzed in site-specific activity plans following approval of the Proposed Plan.

In addition to meeting the requirements in the *Federal Land Policy and Management Act of 1976* for land use planning (43 CFR, Part 1600), the resource management plan satisfies the BLM's policy to (1) identify lands suitable for wilderness designation (the study phase of BLM's wilderness review process); (2) identify lands having potential for coal development as suitable or unsuitable for further consideration for coal leasing (43 CFR, Part 3400); (3) respond to the court mandate (Natural Resources Defense Council et al. versus Watt (Civil Action 1983-75)) that requires the BLM to complete a livestock grazing EIS; and (4) identify public land as open, closed, or limited for off-road vehicle use (Executive Order 11989).

The final plan published with the record of decision will describe in detail the approved management and will replace existing plans (management framework plans) developed several years ago for approximately two-thirds of the resource area. The final plan will reduce the number of individual resource plans and environmental impact statements written by including all resources in a comprehensive and integrated analysis of all resource proposals and associated impacts.

HOW THE PROPOSED PLAN WILL BE IMPLEMENTED AND MONITORED

A record of decision will be issued following publication of this final environmental impact statement (FEIS) on the proposed resource management plan (RMP). Printed with the record of decision will be the final RMP. The final RMP will contain the decisions on all the land use recommendations proposed in this FEIS. It will also contain implementation criteria and a monitoring plan.

The implementation criteria will guide the order in which projects are implemented. These criteria will be tied to the budget process and will be applied annually to determine the projects that will be accomplished first, second, and so on.

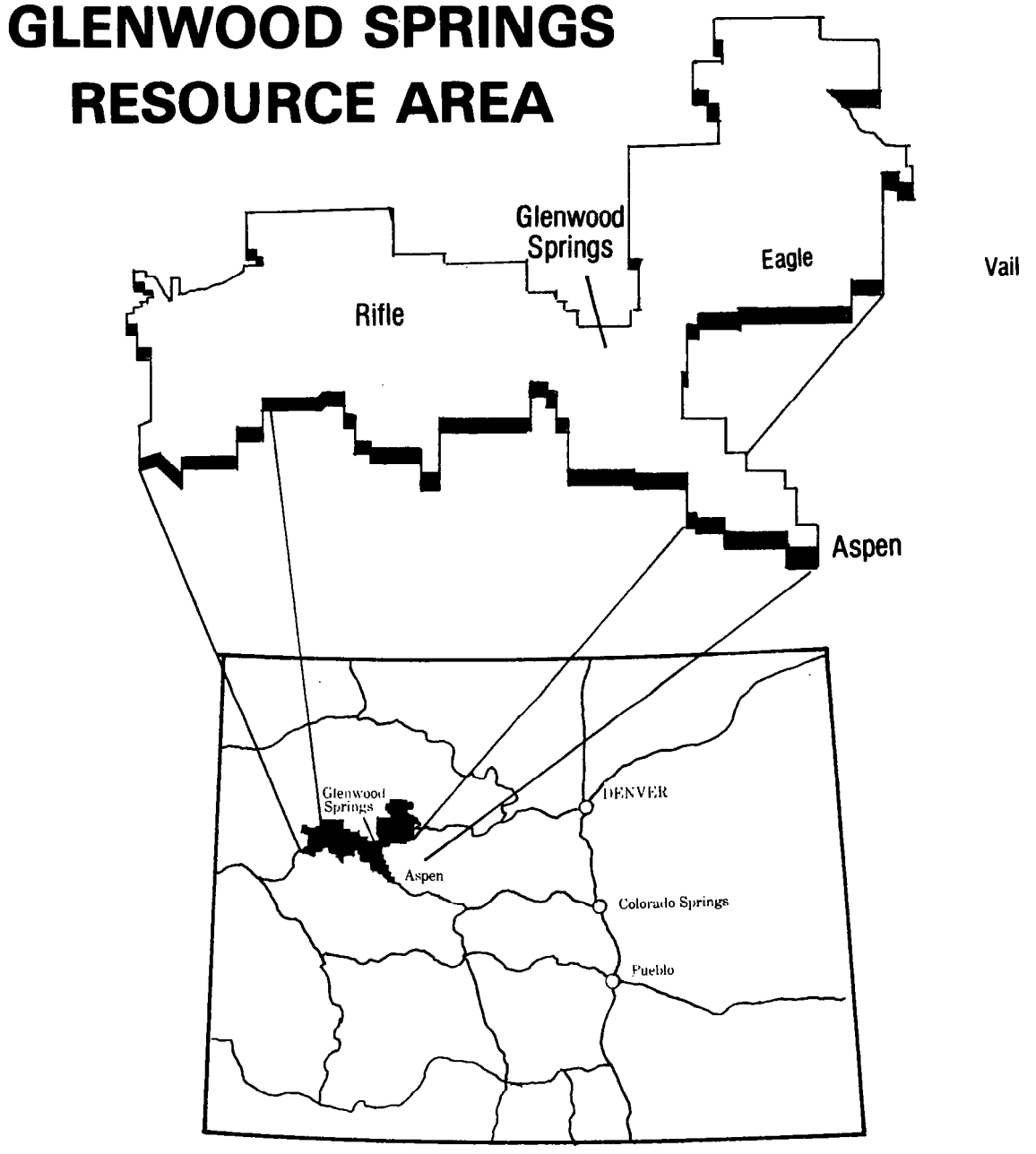
The monitoring plan will outline monitoring programs for evaluating the effectiveness of plan proposals such as forage allocations and water quality improvements. Monitoring will determine whether assumptions were correctly applied and impacts correctly predicted. Monitoring will also help to establish long-term use and resource condition trends for the resource area and will provide valuable information for future planning.

The record of decision will be the approval authority for implementing the land use allocations, broad production goals, and other actions contained in the final RMP. However, activity plans and environmental assessments will be required prior to conducting specific actions such as timber harvesting. For example, forest management plans will show specific project locations; describe and analyze the impacts of specific actions associated with development, operation, and rehabilitation of the project; and compare project costs with project benefits.

DESCRIPTION OF THE PLANNING AREA

The Glenwood Springs Resource Area is located in west central Colorado 85 miles east of the BLM Grand Junction District Office (Fig. 1-1). It is bor-

FIGURE 1-1
LOCATION MAP



dered on the north and east by the BLM Craig District and White River National Forest, on the south by the White River and Grand Mesa National Forests and the BLM Grand Junction Resource Area, and on the west by the BLM Grand Junction Resource Area.

The land ownership pattern is fragmented and stretches about 100 miles from west to east and 60 miles from north to south. The area lies primarily within Garfield, Eagle, and Pitkin Counties with smaller parts in Routt, Rio Blanco, and Mesa Counties. Approximately 1,280,000 acres of public, state, and private lands lie within the resource area boundaries. Public land accounts for 566,042 of these acres. Figure 1-2, located at the end of this document, shows land status.

CHAPTER 2

ISSUES AND PLANNING CRITERIA

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Following is a summary of the issues and planning criteria that were developed to guide the team in their approach to resolving land use problems. The planning issue is listed first, followed by those criteria applicable to the issue.

Issues and the proposed actions recommended to resolve the issues are also discussed in the Summary section of this document.

Air Quality Management

How will the Clean Air Act, air quality classifications, and other federal and state legislation affect development on public land and adjacent private land?

- Determine the potential effect of resource management proposals on air quality.
- Identify the current air quality classifications and determine where they apply.
- Comply with all applicable federal and state air quality standards and regulations.

Water Quality Management

Which public land should the BLM manage to maintain or enhance water quality?

- Identify the needs and opportunities for water quality management.
- Determine the effect of water quality management on other resources and resource programs.
- Comply with all applicable federal, state, and local legislation.

Water Yield Management

Which public land should the BLM manage to maintain or enhance water yield?

- Determine the need and opportunities for water yield management.
- Determine the effect of water yield management on other resources.

Critical Watershed Areas

Which public land should be managed to protect critical watershed values?

- Delineate critical watershed areas.
- Determine the potential for management of critical watershed areas.
- Determine the effect of management on other resources.

Minerals Management

1. *Which public land should remain open to mineral exploration and development?*

- Comply with all applicable laws, regulations, and policies pertaining to mineral exploration and development.
- Identify known and potential valuable mineral resources within the resource area.
- Consider state and county land use plans, mining regulations, cooperative agreements and memorandums of understanding.
- Coordinate with other land management or regulatory agencies.
- Obtain the input and concerns from industry and the public.
- Determine the effect (compatibility) on other resources of mineral exploration and development.

2. *Which lands containing federally-administered coal should be considered suitable for coal leasing and development?*

- Comply with all applicable Bureau laws, regulations, and policies pertaining to coal leasing and development.
- Identify known and potential valuable coal resources within the resource area.

- Apply the unsuitability criteria for coal.
- Coordinate with other land management or regulatory agencies.

Aquatic Habitat Management

1. *Where should BLM manage fisheries habitat on public land?*

- Determine fish populations, species, habitat needs, and trends of the streams and lakes in the resource area.
- Assume that the supply and demand for fisheries habitat is related to the supply and demand for fishing.
- Determine current stream condition, quality, and trend.

2. *On what public land should the BLM request appropriation of water?*

- Determine the current or proposed need for water.
- Determine the availability of water.
- Comply with applicable state and federal legislation.

Terrestrial Habitat Management

1. *Which public land should be maintained for wildlife use?*

- Determine the existing and future uses of the resource area on both public and private lands.
- Identify existing and potential wildlife use areas on public and private lands.
- Identify riparian and wetland habitats.
- Identify habitat requirements for threatened or endangered species, sensitive species, state-listed common species, cavity-dwelling birds and mammals, all raptors, riparian/wetland-dependent species, and sage grouse.
- Identify special habitats such as crucial winter range, migration routes, and elk calving areas.

2. *What levels of habitat management intensity are appropriate, and what management practices are suitable for each level?*

- Determine the forage requirements for big game species.
- Determine the condition and trend of existing big game habitat.
- Identify existing wildlife species, populations, and trend on public land.
- Identify crucial habitat for major wildlife species in the resource area.
- Determine the potential for improvement of the habitat.
- Determine the wildlife species to which forage will be allocated.
- Determine the importance of seasonal use areas.
- Determine the social and economic impacts when establishing forage allocations.
- Identify existing and potential wildlife habitat problem areas.

Livestock Grazing Management

1. *Which public land should BLM manage for livestock forage production?*

- Determine which lands are suitable for livestock grazing.
- Identify existing livestock use areas on public land.
- Define the requirements for all other competing uses for space including threatened and endangered species.
- Assume that all public land suitable for livestock grazing will be managed for livestock grazing.
- Determine the social and economic demand, dependency, and trend of the local livestock industry.

2. *What level of management intensity and livestock use should be proposed on public land managed for livestock forage production, and what management practices should be used?*

- Determine the required level of management intensity for livestock grazing by allotment.
- Determine existing forage condition and trend.
- Determine the potential for increased forage production.
- Define other resource problems that could be improved through grazing management.
- Determine forage requirements for all livestock species.
- Determine forage requirements for all other uses.
- Consider all demands on the forage and the associated impacts when allocating forage.

Forest Management

1. *Which public land should BLM manage for commercial forest land and woodland?*

- Assume that all public land suitable and available for timber management will be managed for the purpose of producing timber products.
- Determine forest manageability and availability.
- Identify resource values sensitive to timber management and determine locations where timber management should be restricted.

2. *What techniques should be used to harvest forest products?*

- Assume that the timber management practice used will be designed to meet the ecological needs of the tree species and to maximize forest resource wood outputs.
- Consider the demand and need for management of the timber resource.
- Follow established guidelines for harvest and management practices.
- Consider the potential impacts associated with the various management practices.

3. *What level of harvest should be allowed to sustain timber production?*

- Assume that, within the constraints of the sustained use principles, a practical, technically feasible, and economically sound level of management will be recommended and that the protection or enhancement of other resource values will be considered.

Recreation Resource Management

1. *What types and levels of management should be required to provide suitable recreational opportunities on public land while protecting environmental quality and reducing conflicts with adjacent landowners?*

- Determine the capabilities of the public land to generate recreational use over time.
- Determine the existing recreational settings in the resource area.
- Identify the existing types and levels of recreational use in the area.
- Define existing recreational opportunity spectrum (ROS) management classes.
- Identify existing and potential conflicts with adjacent land uses and landowners.
- Identify the management requirements to maintain recreational opportunities.

2. *What types of facilities and services should be provided to maintain suitable recreational opportunities to accommodate present and future use on public land?*

- Identify the recreational values of activities, settings, and experiences—the ROS system.
- Identify existing and predicted use levels.
- Consider the ROS class in which the facility is to be placed.

3. *How should resource values be managed to provide and maintain suitable recreational opportunities on public land?*

- Estimate current and future needs for recreational opportunities.
- Specify resource values needing protection to accommodate existing or future recreational use.

4. *Which natural and cultural features should be managed for recreational, scientific, and educational purposes?*

- Identify significant features using local, state, and national inventories, registers, other publications, or knowledgeable contacts.
- Determine manageability of the features.
- Identify potential conflicts with adjacent land uses.
- Examine aspects of visitor safety.

Social and Economic Conditions

1. *What significant social and economic impacts can be expected to result from public land and resource management decisions?*

- Determine what actions are likely to leave significant social or economic impacts.
- Analyze the local economy and the extent to which it is dependent on BLM.
- Evaluate current infrastructure in areas potentially affected by BLM decisions.
- Evaluate community attitudes and social values that are likely to affect BLM decisions.

2. *What social and economic needs of communities in the resource area could be addressed by BLM?*

- Identify social and economic needs that involve the management of public land.

- Specify actions that BLM could take to address these needs.

Cultural Resource Management

1. *What is the value of each cultural resource, and how should these resources be protected?*
2. *Which public land should receive special designation, and which designation is most appropriate?*
3. *What can be done to prevent loss of cultural resources?*

- Use the Glenwood Springs Cultural Resource Management Guide to determine the value of each cultural resource and what techniques are available for the protection and management of the sites.
- Use the criteria for determining if a cultural resource is eligible for inclusion to the National Register of Historic Places.

Paleontological Resource Management

How should important paleontological values be protected?

- Use the Bureau's established procedures for identifying and protecting important paleontological resource values.

Wilderness Management

Which public land should be recommended to Congress as suitable for designation as wilderness?

- Analyze wilderness study areas (WSAs), all of which meet the minimum characteristics for wilderness study.
- Use those additional analysis criteria and quality standards identified in BLM's study policy to evaluate the WSAs for wilderness suitablility.

Areas of Critical Environmental Concern

Which public land should be designated as areas of critical environmental concern?

- Use the BLM's established policy for the identification and management of areas of critical environmental concern.

Visual Resource Management

What type or level of management should be used to maintain or enhance the visual quality of public land consistent with multiple use management objectives?

- Use the BLM's established policy for the management of visual resources—the visual resource management system.

Land Tenure Adjustments

Which public land should be identified for disposal and retention?

- Consider resource values, size, location, adjacent land use, land ownership patterns, and the needs of the other resources when determining which public land should be classified for disposal or retention.
- Coordinate proposals with other agencies.
- Consider all applicable laws, regulations, and policies.

Off-Road Vehicle Management

Which public land should be designated open, closed, or limited to off-road vehicle use?

- Determine the impacts of existing and potential off-road vehicle use on public land.
- Coordinate with other resources to minimize conflicts with other existing and proposed uses.
- Coordinate with other agencies.

Transportation Management

Where is legal access to public land necessary or desirable?

- Determine the existing access situation.
- Determine the needs for access by BLM, the public, and other agencies.
- Determine the type of access needed.
- Identify the impacts on the physical, social, and economic environment.
- Consider all applicable laws, court decisions, regulations, and policies.

Utility and Communication Facility Management

Which public land should be identified as suitable for utility and communication facility development?

- Identify existing facilities.
- Determine the future needs of the area for these facilities.
- Determine the suitability of public land for utility and communication facilities.
- Identify important resource values that would be adversely impacted by facility development.
- Coordinate with other agencies and utility companies.

Fire Management

1. *Which public land should be managed to reduce fire hazards?*
2. *Which public land would benefit from fire when used as a management tool?*

- Determine the current situation on public land for fuel loading, high fire hazard areas, fire probability, and fire occurrence.
- Analyze the fire history for the resource area.
- Determine the manageability of public land to use fire as a tool.
- Identify the needs of the other resource programs and how fire could play a role in the management of those resources.

3. *How will controlled burning practices be implemented to minimize air quality impacts from resulting particulates?*

- Controlled burns and any other open burning would comply with BLM Manual Section 7723, Air Quality Management Requirements, to minimize air quality impacts from resulting particulates.

CHAPTER 3

THE PROPOSED PLAN

CHAPTER 3

THE PROPOSED PLAN

INTRODUCTION

Chapter 3 describes the Proposed Plan. It is divided into five major sections: (1) How the Proposed Plan was Selected, (2) Management Philosophy, (3) Description of the Proposed Plan, (4) Summary of Actions in Specific Geographic Areas, and (5) Comparative Analysis.

HOW THE PROPOSED PLAN WAS SELECTED

The Proposed Plan was selected by a team composed of the district manager, area manager, team leader, and appropriate team specialists. It was reviewed by the State Director. It was selected based on (1) issues raised throughout the planning process, (2) public input received during the formal 90-day comment period and at meetings, workshops, and in response to newsletters, (3) a set of decision criteria (presented in Chapter 3, DEIS), and (4) the environmental analysis developed on the previously-formulated alternatives.

MANAGEMENT PHILOSOPHY

Introduction

The Management Philosophy section describes the major emphasis or management direction of the Proposed Plan. The philosophy will guide the land manager in making decisions regarding consistency of new proposals not considered in the plan. However, the final determination on consistency will be made only by comparing the specific outside proposal to the proposals in the plan.

Philosophy

This Proposed Plan emphasizes not only the protection of fragile and unique resources but also the production and development of renewable and non-renewable resources. The protection and production of resources are not in geographic conflict.

Under the Proposed Plan, livestock grazing and wildlife habitat would both be given management emphasis directed toward maintaining or increasing existing wildlife populations and stabilizing grazing operations. A total of 10,118 acres would be recommended suitable for wilderness. Critical watersheds near Glenwood Springs, Rifle, and New Castle and erosion hazard areas scattered throughout the resource area would receive special protection. Visual resources would be emphasized resource area wide, especially along the Interstate 70 and Highway 82 travel corridors and in Thompson Creek, Bull Gulch, and Deep Creek. Restrictions on mineral development would be minimized except in areas where important and unique resource values would be lost from activities associated with mining. Forest management would occur at near current levels, and recreation would be focused on the upper Colorado River for floatboating and in high use areas to minimize resource degradation.

DESCRIPTION OF THE PROPOSED PLAN

This section describes in detail for each resource the management *objective,* the specific *proposed management actions,* the *rationale* for those actions, any required *support* from other resources, a description of the procedures for *implementation* of the proposed actions, a discussion of the *consistency* of the proposals with other agency plans, and a brief analysis of the major environmental *effects* of implementing the proposed actions. A description of the other alternatives—Continuation of Current Management, Resource Protection, Economic Development, and the Preferred Alternative—are displayed in the draft environmental impact statement (DEIS).

Throughout this section, you will find references to maps. These maps display management actions proposed by each resource under the Proposed Plan. They have been compiled at the end of this document for your review. The maps displaying the DEIS alternatives are located in a separate map addendum which was published as part of the DEIS.

Required management stipulations were developed by specific resource to reduce impacts of proposed actions. These stipulations are part of the Proposed Plan and are required upon plan implementation. They are located in Appendix B.

The Proposed Plan is a modified version of the Preferred Alternative presented in the DEIS. To aid in comparing the two alternatives, arrows (→) have been placed in the margins of changed pages to indicate changes to the Preferred Alternative.

Air Quality Management

Objective

→ To limit air quality degradation in the resource area by ensuring public land use activities are in compliance with federal, state, and local legislation.

Proposed Management Actions

→ Existing air quality would be inventoried to establish a baseline from which changes associated with BLM or other agency proposals could be determined. Future impacts from BLM actions would be predicted prior to implementation. Proposed projects would comply with all applicable local, state, and federal regulations to limit air quality degradation.

Rationale

Preservation of air quality is important to public health and welfare (local economy, aesthetics, and so on), but development in the resource area (through industrialization, population growth, and the like), will cause deterioration. In certain areas, the existing air quality is so pure and unique that special legislation has been passed to limit significant deterioration (PSD Class I and Colorado Category areas); however, BLM's ability to limit regional impacts is limited. Specifically, the BLM will continue to comply with all applicable local, state, and federal air quality regulations in order to limit air quality degradations due to BLM activities.

Support

Technical support would be required from air quality specialists in the Colorado State Department of Health, Air Pollution Control Division; U. S. Environmental Protection Agency, Region VIII; and the U. S. Forest Service, Region II.

Implementation

Site-specific project plans for proposals affecting public and adjacent lands would be reviewed for compliance with existing air quality laws and policies protecting these areas. BLM personnel would coordinate with state and federal agencies and private organizations to incorporate existing monitoring data. Additional monitoring might be implemented by BLM when necessary. Potential air quality impacts from BLM actions would be addressed through environmental assessments. Mitigation would be incorporated into project proposals when necessary to reduce air quality degradation.

Consistency

These procedures are consistent with Colorado Department of Health, Air Pollution Control Division and U. S. Environmental Protection Agency, Region VIII, goals for air quality management.

Effects

Deterioration of air quality would be limited as required by law.

Water Quality Management

The resource area lies within two 208 planning regions. Pitkin, Eagle, and Routt Counties lie within the Northwest Colorado Council of Governments' 208 region; Garfield, Mesa, and Rio Blanco Counties fall within the Colorado West Area Council of Governments' 208 region. BLM intends to comply with water quality guidelines developed in these 208 plans and with state water quality standards.

Objective

To maintain or improve existing water quality in the resource area where possible.

Proposed Management Actions

Four areas shown on Map 3-1 would be investigated to identify the origins of existing water quality problems. Actions would be taken to improve the problems originating on public land using management techniques listed in Appendix A (DEIS). ←

Remaining public land outside these water quality management areas would be managed to maintain

or improve water quality through other resource programs.

Rationale

Areas were proposed for water quality management if (1) they were identified as having poor water quality by the BLM's water quality monitoring program or by other agencies' water quality monitoring efforts and (2) they contained a large percentage of public land in the watershed and, therefore, a high probability existed that public land was the source of much of the problem. In addition to the above, public concern over the impact of sediment from the Milk and Alkali Creek watersheds on the fisheries of the Eagle River prompted recommendations for water quality management in these drainages.

Support

Engineering support would be required in the design and construction of proposals for protection of water quality. Erosion control structures would require, at a minimum, the filing of a permit with the Colorado State Engineer. Water rights would be required for perennial streams, on reservoirs over 10 acre-feet in size, or on dams taller than 15 feet.

Implementation

The authority to monitor the four areas identifed on Map 3-1 to determine sources of water quality problems would be the approval of the Proposed Plan.

However, prior to monitoring, a water quality monitoring plan would be prepared to detail the type of monitoring that would be conducted. It would outline how surface-disturbing activities such as range and wildlife vegetation manipulations, timber and woodland harvest, road construction, and minerals projects would be evaluated.

For project monitoring, the *above and below* or *paired station* approach would be used, and samples would be collected as frequently as needed to detect statistically significant changes in water quality. Monitoring would be conducted to ensure that Colorado state water quality standards were not violated and sediment thresholds were not exceeded. Project monitoring would also evaluate the effectiveness of mitigation measures and would be useful for recommending remedial action, if necessary.

Prior to taking corrective actions to reduce water quality problems identified through monitoring, a site-specific activity plan would be written. The activity plan would outline specific measures to rectify the problems. An environmental assessment would be prepared to analyze the impacts of the proposed corrective measures.

In addition to monitoring and taking corrective actions to improve water quality, site-specific mitigation measures would be included in other resource projects having the potential to affect water quality.

Consistency

Except for 208 plans and state water quality standards, local land use plans and policies do not specifically address water quality.

The *Colorado West Area 208 Plan* essentially leaves planning for control of nonpoint sources of pollution on public land to public land management agencies but recommends they prepare nonpoint source control plans. In its continuing planning program proposals, the 208 plan recommends a number of water quality measures that are consistent with the water quality recommendations under the Proposed Plan.

The *Northwest Colorado Council of Governments' 208 Plan* addresses among other topics, vegetation disturbance. In its policy statement, it says that "The surface and ground waters of the region shall be protected by maintaining permanent vegetative cover and by controlling disturbances to vegetation." A number of administrative guidelines proposed in this section of the 208 plan are also consistent with water quality recommendations under the Proposed Plan. A second policy section entitled *Encroachment* states as objectives that site disturbances on lands adjacent to surface waters and riparian environments be minimized and that alteration and filling of stream channels also be minimized. These objectives are also consistent with water quality management recommendations. In addition, the *Northwest Colorado Council of Governments' 208 Plan* recommends enforcement of maximum allowable departures of stream suspended sediments based on administrative criteria proposed by the U. S. Forest Service. These levels were used to analyze significance of vegetation treatment impacts in the water quality Environmental Consequences section. Actions proposed to maintain or improve water quality have received favorable support from affected city and county governments.

Effects

Depending on the source of water quality problems in problem areas and whether they would improve with management, some improvement in

water quality would likely occur in the problem areas with negligible beneficial impacts occurring in major tributaries such as the Eagle and Colorado Rivers.

Water Yield Management

Objective

→ To increase water yield throughout the resource area through forest management practices and through treatment of mountain brush vegetation types to improve livestock and big game forage.

Proposed Management Actions

→ Water yield objectives would be achieved by including, to the extent possible, design features in other resource activity project proposals that increase water yield. Projects that could be designed to increase water yield include mountain brush (oakbrush being the main component) treatment by mechanical manipulation or by burning to increase forage for livestock and wildlife, commercial forest harvest, and aspen and spruce-fir harvest (Map 3-2). Design features that could be incorporated in these programs are listed in Appendix A (DEIS).

→ An experiment would be conducted on the Naval Oil Shale Reserve west of Rifle to determine both the quantity and time of year that increases in water yield could be expected from aspen harvest.

Tentatively, the experiment would be conducted by laying out an aspen cutting area on one drainage and then monitoring the effects on streamflow. A second drainage would be left undisturbed and used as a control. Aspen harvest units would not exceed 40 acres or 10 percent of a watershed, whichever is greater.

Success of the experiment would be judged on its effects on quantity and timing of water yield, peak flows, and environmental effects. If the aspen experiment were not successful, water yield would not be included as an objective of project proposals in aspen areas. Only if the experiment were successful and indicated water yield could be a valuable byproduct of aspen harvest would the objectives and design features be included into other forest management practices for aspen. Any subsequent harvest of aspen would be by conventional cutting methods. Cuts would be rotated through aspen stands, and no more than 315 acres would be harvested each year. Herbicides would not be used.

Rationale

The water yield proposals were developed in response to concerns about the scarcity of water. These concerns were voiced at the initial series of public meetings held around the state and by the Grand Junction District Advisory Council.

The recommendations under this Proposed Plan have been revised in response to public comments on the DEIS and review of inventory information. The Proposed Plan recommends that water yield be increased as a secondary objective of management by other resource programs rather than by management specifically for the purpose of increasing water yield as proposed in the DEIS. This recommendation reduces the scale of the water yield proposals from those in the DEIS and makes additional water yield a secondary benefit of other management activities.

The experiment proposed in the DEIS and in the FEIS under the Proposed Plan would enable site-specific evaluation of the effects of aspen harvest on water yield and timing, peak flows, and environmental conditions such as water quality, erosion, scenic values, and wildlife, and health and vigor of species. Aspen was proposed for the study because of the shortage of site-specific information that exists for water yield changes resulting from aspen harvest. The Naval Oil Shale Reserve was selected as the site for the experiment for several reasons. First, it contains one of the largest concentrations of aspen in the resource area. Second, a network of U. S. Geological Survey stream gauging stations that collect both streamflow and water quality data has been in place for about 6 years. Third, a network of rain gauging and snow monitoring courses exists. The cumulative effect is that a great deal of baseline information is already available, and, if these facilities could be incorporated into the study, the costs of conducting the study could be reduced.

The work would be coordinated with the Department of Energy.

Support

Fire management support would be needed for managing natural fire in areas where water yield objectives could be met through fire management.

Implementation

Following approval of the Proposed Plan, a research proposal for the water yield study would be prepared. This proposal would detail the location, treatment technique, length of the study, monitor-

ing, equipment, manpower, budget requirements, and the criteria by which the study would be judged a success or failure. Other interested parties would be invited to participate in the study.

Assuming the project were successful, design features that increase water yield in aspen areas would be included to the extent possible in forestry proposals for aspen management.

Water yield measures for other vegetation types would be included in the design of other projects such as mountain brush treatments by the range and wildlife programs or timber harvest by the forestry program.

The only monitoring that would be conducted specifically for water yield is the initial water yield study on the Naval Oil Shale Reserve. Water quality monitoring would be conducted during implementation of aspen treatments once the study were completed, assuming results were favorable.

Consistency

Local land use plans and policies do not specifically address water yield. Recent draft U. S. Forest Service plans do support management to increase water yield.

Effects

Depending on the extent to which water yield design features could be included in other resource proposals, the cumulative effect of the woodland and commercial forest harvest and mountain brush manipulation would be an increase in water yield of 700 to 3,440 acre-feet per year after 20 years of implementation. The additional yield, depending on location and timing, would provide additional water to the numerous small stockponds and reservoirs in the resource area and might prolong the discharge of springs and intermittent streams. The additional yield would benefit livestock and wildlife and be of negligible benefit to water users in the Colorado River Basin as a whole.

Critical Watershed Areas

Objective

To protect the municipal watersheds providing domestic water for the communities of Rifle and New Castle, to manage debris flow hazard zones adjacent to Glenwood Springs, and to protect watershed conditions in erosion hazard areas.

Proposed Management Actions

Measures would be taken to protect critical watersheds from damage by motorized vehicle use, vegetation manipulations, timber harvesting, mineral development, fire, livestock grazing, and utility development as shown in Table 3-1. In addition, the debris flow hazard zones adjacent to Glenwood Springs would be designated as an area of critical environmental concern (ACEC) so that special management including recommendations evolving from the Glenwood Springs Debris Flow Study could be implemented. Critical watershed locations are shown on Map 3-3.

Table 3-1. Summary of Restrictions Proposed on Critical Watershed Areas

Action	MW[1]	DFHZ[2]	EHA[3]
Acres identified for protection (Map 3-3)	5,858	7,126	50,200
Acres closed to off-road vehicle use (Map 3-15)	0	0	0
Motorized vehicle travel limited to existing roads and trails during late spring (Map 3-15)	0	0	8,500
Motorized vehicle travel limited to existing roads and trails year round (Map 3-15)	0	0	41,700
Motorized vehicle travel limited to designated roads and trails year round (Map 3-15)	5,858	7,126	0
Vegetation manipulations to increase forage and water yield prohibited	yes	yes	no
Timber harvesting prohibited	[4]no	yes	no
Oil and gas leasing prohibited	no	no	no
Oil and gas surface facilities prohibited	yes	yes	no
Included in fire exclusion zone	yes	yes	no
Suitability designation for utilities development (Map 3-17)	Sensitive	Sensitive	Open
Livestock grazing limited to light grazing	no	yes	no
Designated as an ACEC	no	yes	no

[1]MW—Municipal watersheds
[2]DFHZ—Debris flow hazard zone
[3]EHA—Erosion hazard area
[4]One stand of pinyon juniper on less than 40 percent slope in the Rifle municipal watershed could be harvested.

Rationale

A reduction in the debris flow hazard from the watersheds around the city of Glenwood Springs is an important concern of its residents. Protection of these watersheds and management to reduce the debris flow hazard is emphasized in the Proposed Plan. Protection of the municipal watersheds of Rifle and New Castle to prevent water quality degradation is a concern of these cities and is also emphasized in the Proposed Plan. The erosion hazard areas contain unstable soils with high erosion potential. These areas are proposed for protection to prevent an increase in watershed degradation.

Support

Fire management support would be needed for management of natural fire in meeting the resource objectives and for the protection of critical watershed values.

Engineering support would be needed to design measures for reducing runoff and soil loss in debris flow hazard zones.

Implementation

Recommendations to protect municipal watersheds would go into effect upon approval of the plan. No monitoring would be involved.

Off-road vehicle recommendations to protect erosion hazard areas would go into effect upon approval of the plan (see Chap. 3, Off-Road Vehicle Management).

Recommendations to protect the debris flow hazard zones would also go into effect upon approval of the plan. In addition, the debris flow mitigation study contracted by the city of Glenwood Springs includes a number of recommendations that apply to public land. The BLM would work closely with the city to ensure rapid and efficient implementation of practical recommendations.

For the debris flow hazard zone above the unincorporated area west of Glenwood Springs not included in the debris flow study, the BLM would work with the public to derive measures to reduce the debris flow hazard. Measures that apply to public land would be subject to environmental and feasibility analysis and, assuming these were favorable, would be implemented as funding became available.

Consistency

Protection of municipal watersheds is consistent with Rifle and New Castle government priorities. Management of debris flow hazard zones is supported by the city of Glenwood Springs and Garfield County.

Effects

The water quality in the municipal watersheds of New Castle and Rifle would be maintained. Debris flowing into the town of Glenwood Springs would be reduced, and increased erosion in high erosion hazard areas would be prevented.

Minerals Management

Various mining laws govern the use and disposal of federal minerals. Under these laws, a person may locate mineral claims, lease, or buy federal minerals from the United States. BLM disposes of federal minerals under appropriate authority to allow development and production to occur.

To protect other resource values from damage associated with mineral activities, the BLM is allowed to withdraw lands for certain uses, thus closing them to mineral entry. These withdrawals can be formal withdrawals or BLM administrative actions. The BLM may also place constraints on the associated mineral activities such as no surface facilities for oil and gas.

Objective

To maintain the maximum amount of public land available for exploration and development of minerals.

Proposed Management Actions

Land currently withdrawn for other uses would continue to be withdrawn. Existing constraints placed on mineral activities by other resources would also continue.

Additional constraints placed upon mineral activities would protect high value recreation resources, wilderness resources, and water resources (critical watersheds). Existing and proposed restrictions are shown on Map 3-4 and Table 3-2.

Approximately 28,520 acres in the Hogback Coal field (Map 3-4) would be designated as acceptable for further consideration for coal leasing based on a

Table 3-2. Summary of Withdrawals and Constraints Affecting Minerals

Mineral Activity and Reason for Closure[1]	Acres	Percent of Resource Area[2]
Closed to Mineral Location		
Suitable Wilderness (Map 3-11)	9,778	
Reclamation Project	1,892	
Thompson Creek Natural Environment Area	4,286	
Recreation Sites	250	
Public Water Reserves	5,120	
Recreation and Public Purpose	1,430	
*Oil Shale Withdrawal	31,204	
Deep Creek Recreation Management Area	2,470	
Total	56,430	10
Closed to Oil and Gas Leasing		
Suitable Wilderness	9,778	
Thompson Creek Natural Environment Area	960	
Total	10,738	2
Closed to Oil and Gas Surface Facilities		
Thompson Creek Natural Environment Area	3,326	
Fryingpan, Roaring Fork, Eagle, Crystal, and Colorado River Corridors	21,218	
Rifle Mountain Park and Rifle Fish Hatchery	1,360	
Hack Lake Recreation Management Area	3,456	
Deep Creek Recreation Management Area	2,470	
Municipal Watersheds	5,858	
Glenwood Springs Debris Flow Hazard Zones	7,126	
Total	44,814	6
Closed to Mineral Sales		
Suitable Wilderness	9,778	
Thompson Creek Natural Environment Area	4,286	
Deep Creek Recreation Management Area	2,470	
Total	16,534	3

[1]See Map 3-4 for closure locations.
[2]Percentages not additive.
*Closed for the development of oil shale.

coal unsuitability review (Appendix C, DEIS). These lands are within the Uinta-Southwestern-Utah Coal Region (Fig. 3-2, DEIS). Approximately 1,560 acres would be unacceptable for coal leasing based on multiple use conflicts. These conflicts were identified in a 1978 coal update of the Glenwood Springs Management Framework Plan. The coal update lists 13 reasons why this area would be unacceptable for coal development which are still valid today. One of the primary reasons for exclusion is that the coal is situated under an existing housing development.

Considering the proposed limitation on minerals, a majority of the public land in the resource area would still be potentially available for mineral exploration and development. A total of 509,612 acres (90 percent) would be potentially available for mineral location, 555,304 acres (98 percent) for oil and gas leasing, and 549,508 acres (97 percent) for mineral sales.

Rationale

The development of energy minerals is important to both the local economy and the nation. Therefore, the Proposed Plan proposes a limited number of additional restrictions on mineral activities while still protecting those fragile resources easily impacted by mineral development. These restrictions include those already in existence because the need to protect those resources is still valid. The additional restrictions are consistent with the existing minerals management policy as these restrictions were considered to be the only option for protecting the unique or fragile resources. All restrictions would be subject to valid existing rights.

Support

Cadastral support would be needed to locate public land boundaries.

Implementation

Restrictions on oil and gas activities and restrictions on mineral sales would become effective upon approval of the plan. Restrictions on mineral location (Deep Creek) would require a formal withdrawal under Secretarial order. Approval of the plan would also constitute a continuation of all existing restrictions on mineral development.

The restrictions on mineral development in the wilderness study areas (WSAs) identified as suitable for designation as wilderness would become effective only after Congress formally designated these areas as wilderness. The minerals restrictions proposed in the WSAs identified as nonsuitable would take effect upon approval of the plan. However, the restrictions would be changed to be compatible with wilderness management on any nonsuitable areas that Congress designates as wilderness.

Locatable Minerals. Prospectors could claim and develop locatable minerals on areas open to mineral location (509,612 acres). BLM approval would not be needed if proposed operations would disturb 5 acres or less per year, but notification would be required. Operators proposing to disturb more than 5 acres per year would be required to submit a plan of operations under *43 CFR 3809, Surface Management of Public Lands under U. S. Mining Laws.*

Leasable Minerals. Mineral reports and environmental assessments would be prepared for all applications to prospect and develop geothermal, potassium, and other leasable minerals except oil and gas. Development that would not significantly conflict with environmental, economic, or social values would be approved.

Oil and gas development would occur on areas identified in the plan as open to leasing (555,304 acres). Site-specific stipulations required to mitigate impacts of development would be included in oil and gas leases and in permits to drill.

Upon approval of the plan, those areas identified as suitable for further consideration for coal leasing would enter the formal coal leasing process. The first step would be to ask for industry interest in posssible coal leasing on the Grand Hogback. Lease tracts would be delineated and tract profile reports written for areas where interest was received. The regional coal team would then rank the tracts for high, medium, and low leasing potential. The team would then group the tracts and prepare a regional environmental impact statement for those tracts and other tracts identified throughout the coal region. The coal team would then make recommendations on tract leasing to the Secretary of the Interior who would make the final decision on lease tracts and lease sale schedules.

Salable Minerals. Salable minerals (moss rock, top soil, sand and gravel, scoria, and fill dirt) would be purchased from established common use areas. Mineral reports and environmental assessments would be prepared on all government agency and individual applications to extract salable minerals outside of common use areas. Operations that would not conflict with environmental, social, or economic values would be accepted.

All withdrawals and constraints would become binding following plan approval and approval of petition for withdrawal. Land not closed to mineral location, mineral leasing, or mineral sales would be open for mineral entry. The need for restrictions on mineral activities would be reviewed periodically.

Consistency

The local land use plans for Garfield and Pitkin Counties state that mineral development should take place in such a manner as not to destroy the recreational and scenic values of the counties and that mineral activities should not destroy the ability of the land to be used for farming and ranching. The Proposed Plan is consistent with the intent of these land use plans.

Effects

Closing additional acres to mineral location, oil and gas leasing, oil and gas surface facilities, and mineral sales (Table 3-2) would reduce by a like amount the number of acres available for exploration and development. These reductions could adversely affect the minerals industry in the long term if demands for these resources increase significantly. However, other valuable resources such as wilderness, recreation, public water reserves, municipal watersheds, water quality, and scenery would be protected.

Aquatic Habitat Management

Objective

To increase fish production and recreational fishing use on streams having more than one-half mile of continuous flow across public land and on lakes surrounded by at least 40 acres of public land. (Only streams and lakes with existing or easily obtainable public access and either an existing or potential fishery would qualify for management.)

Proposed Management Actions

Aquatic habitat of streams and lakes identified on Map 3-5 and listed in Table 3-3 would be monitored or improved. Appendix A (DEIS) lists management actions that could be used to improve fisheries. The streams and lakes on public land not recommended for improvement would be monitored for changes in aquatic conditions. Those found to be in a declining condition would be improved as funding and manpower became available. Coordination with the Colorado Division of Wildlife would be required to establish minimum streamflow or pool levels for streams and lakes proposed for management where filings do not currently exist.

Fish management emphasis in the resource area is primarily on Colorado River cutthroat, brook, and rainbow trout; however, other cold and warm water game and nongame fish species that exist in the resource area would benefit from the proposed actions.

Table 3-3. Summary of Proposed Fisheries Actions

Number[1] and Name	Habitat Improvements		Monitor		Area of Critical Environmental Concern		Minimum Filings		Access Required (miles)[2]
	Miles	Surface Acres	Miles	Surface Acres	Miles	Surface Acres	Stream-flow	Pool Level	
King Mountain Capability Unit									
1. Cedar Creek			0.6						
2. Rock Creek			3.1						
3. Egeria Creek			7.6				X		7.6
4. Deep Creek			3.9						
→ 5. Cabin Creek			1.4						
6. Sunnyside Creek			2.0						
7. Willow Creek			0.5						
→ 8. Hack Lake		2.0						X	
9. Sheep Creek West Fork	2.7						X		
10. Sheep Creek			0.5						
11. Sweetwater Creek			0.5						
12. Derby Creek			0.8						
13. Horse Lake				2.1				X	
→ 14. Red Dirt Creek	1.0						X		
15. Upper Colorado River	25.1						X		
Castle Peak Capability Unit									
→ 16. Piney River			1.6						
17. Castle Creek	2.9						X		2.9
18. Edges Lake		3.0						X	
→ 19. Catamount Creek	2.0						X		2.0
→ 20. Norman Creek	1.2						X		
Eagle-Vail Capability Unit									
21. Eagle River	5.0								
22. *Frost Creek			0.7						
23. Salt Creek			0.2						
24. Cottonwood Creek			0.8						
→ 25. Abrams Creek	1.9						X[3]		1.9
Roaring Fork Capability Unit									
26. Prince Creek			1.3						
27. Thompson Creek			2.5						
28. Thomas Creek			0.8						
→ 29. Crystal River									
30. Sopris Creek West			1.3						
31. Sopris Creek East			0.6						
32. Snowmass Creek			0.2						
33. *Red Canyon Creek			0.5						
34. Fryingpan River			2.9						
35. *Coulter Creek West			1.9						
36. Cattle Creek	0.5		0.9				X		
→ 37. Fourmile Creek									
38. Thompson Creek North			2.3						
39. Threemile Creek			0.3						
40. Roaring Fork River			1.2						
41. *Mesa Creek			0.6						

Table 3-3. Summary of Proposed Fisheries Actions—Continued

Number[1] and Name	Habitat Improvements		Monitor		Area of Critical Environmental Concern		Minimum Filings		Access Required (miles)[2]
	Miles	Surface Acres	Miles	Surface Acres	Miles	Surface Acres	Stream-flow	Pool Level	
42. Mitchell Creek			0.8						
43. Colorado River			1.0						
Garfield Capability Unit									
44. Rifle Creek			0.6						
45. Elk Creek Main			0.2						
46. Harris Gulch			1.9						
47. Butler Creek			1.8						
48. Rifle Creek Middle			1.8						
49. George Creek			0.8						
50. Rifle Creek East			0.3						
51. Piceance Creek			0.5						
52. Harris Reservoir				12.0					
53. Elk Creek East			0.1						
54. Keyser Creek			0.9						
55. *Dry Possum Creek			0.4						
56. Canyon Creek East			2.0						
57. Possum Creek	0.1		4.6				X		4.7
58. Canyon Creek			1.4						
59. Colorado River			1.8						
60. Wallace Creek North			0.9						
61. Wallace Creek			1.2						
62. Battlement Creek			1.0						
63. Cache Creek									
64. *Baldy Creek	1.0		1.0				X		
65. Garfield Creek			0.3						
66. Second Anvil Creek[4]	1.0		0.5						
67. Parachute Creek, East Middle Fork[4]	1.2								
68. Northwater Creek[4]	3.2		1.0						
69. Parachute Creek, East Fork[4]	6.4								
70. Trapper Creek[4]	2.3		3.4						5.7
71. Fravert Reservoir									
72. JQS Gulch[4]	0.5		0.9						
73. First Water Gulch			0.6						
74. First Anvil Creek[4]	1.0		1.5						
75. Lower Colorado River			1.0						
Total	60.2	5.0	75.7	14.1	0	0	11	3	24.8

[1]This number corresponds to the number shown on Map 3-5.
[2]The miles of stream that would require additional legal access for public use.
[3]Below the diversion at SE¼ SW¼ T. 5 S., R. 84 W., 6th P.M.
[4]Management of these streams is outlined in the BLM *Naval Oil Shale Reserve Aquatic Habitat Management Plan.*
*These streams have potential as a fishery but presently do not support a fish population.

Rationale

Aquatic habitat is usually improved to increase fish populations for recreational fishing and to protect or enhance threatened or endangered fish species. The Colorado Divison of Wildlife supports fish programs on streams having good flows and concentrations of recreational use. Therefore, only streams on public land now accessible for fishing or where new access was proposed by other resource programs and streams having more than one-half mile of flow across public land and on lakes surrounded by at least 40 acres of public land were identified for management. Management of several streams for threatened Colorado River cutthroat trout was also emphasized consistent with the objectives of the Colorado Division of Wildlife.

Support

Assistance from the Colorado Division of Wildlife would be required for implementation of habitat improvement projects, fish stocking and introduction, minimum streamflow and pool level filings, and stream monitoring. Engineering and hydrologic support would be required for project design and construction. Fire management support would be

needed for management of natural fire in meeting the resource objectives and for the protection of unique and fragile aquatic habitat areas. Cooperation with livestock operators would be essential in some areas to effectively manage riparian habitat.

Implementation

Streams on the Naval Oil Shale Reserve would be improved as outlined in the BLM Naval Oil Shale Reserve Aquatic Habitat Management Plan following approval of the Proposed Plan. Emphasis would be placed on management of the state threatened Colorado River cutthroat trout. Management prescriptions for other streams in the resource area would be incorporated into habitat management plans or other resource activity plans. The order of implementation would be based upon current condition, potential, presence of Colorado River cutthroat trout, and fishing pressure.

Streams would be monitored to ensure maintenance of water quality and riparian condition and to evaluate the effectiveness of stream improvement practices. This monitoring would include riparian habitat conditions and trend; water quality, quantity, and temperature; fish production; pool and riffle ratios; and bank stability. The order in which streams would be monitored would be based on expected impacts and scheduled habitat improvements. Funding availability would be an important factor in determining how many and what streams would be improved or monitored. Assistance from the Colorado Division of Wildlife for funding and manpower would be essential for a successful management program.

Consistency

Proposed actions are consistent with the Colorado Division of Wildlife's goals for aquatic habitat management (Colorado Division of Wildlife 1977). Their goals for cold water stream fisheries are to acquire more and better access to streams and to provide more available fish for fishing use. The long-range goal for the Colorado River cutthroat trout is to increase its numbers and distribution to a level at which it is no longer threatened.

Effects

Aquatic habitat improvements planned for streams containing Colorado River cutthroat trout would allow an increase in stream miles occupied by this trout as well as an increase in population numbers. This work, in conjunction with that done by other agencies, would assist in the recovery of this species and eventually allow them to be removed from the threatened list. Aquatic habitat improvements on other streams would increase fish populations and recreational fishing opportunities, providing long-term benefits to local users.

Terrestrial Habitat Management

Objectives

To provide approximately 57,933 animal-unit months (AUMs) of big game forage (the amount needed to meet Colorado Division of Wildlife big game population goals in 1988), to improve existing wildlife habitat conditions, and to increase wildlife species diversity.

Proposed Management Actions

Approximately 50 percent of the existing forage on public land in the resource area would be allocated to big game and livestock. The remaining 50 percent of available forage and all nonforage vegetation would be available as habitat for other game and nongame wildlife species (see Appendix F, DEIS, p. 203). The goal for allocation of existing wildlife forage is to meet, resource area wide, Colorado Division of Wildlife population goals. The proposed allocation would provide 46,210 AUMs of forage for big game which would slightly exceed the existing use (5-year average) of 45,120 AUMs.

Present forage production for big game exceeds existing big game use (5-year average) on about 50 percent of the game management units in the resource area. A shortage of big game forage exists in the remaining game management units. The goal for allocation of potential forage is to increase production to meet existing big game needs on those areas currently having forage shortfalls. This would require treatment of 19,840 acres of vegetation over a 20-year period (990 acres per year) and would result in an estimated increase of 6,383 AUMs of big game forage. Potential to increase forage beyond the needs of existing big game exists in some areas but would not be treated until existing demand were satisfied (see Chap. 3, Livestock Grazing, Forage Allocation, for a discussion of methods used in forage allocation).

Livestock grazing would be prohibited on some crucial big game winter ranges after October 15 and on summer and some winter ranges after November 15 to reduce competition between these species (see Livestock Grazing Management section). Habitat would be made available for introductions of sage and sharptail grouse, turkey, peregrine falcon, and river otter. The Grand Hogback

between Rifle Gap and Monument Peak would be identified as a possible bighorn sheep introduction area. Additional information would be needed to determine suitability for an introduction. Water sources would be developed and riparian and waterfowl habitat improved where needed. Off-road vehicle use would be limited on 75,463 acres of crucial winter range (see Off-Road Vehicle Management section).

Several parcels of land totaling 9,710 acres have been identified as suitable for cooperative management with the Colorado Division of Wildlife. If possible, administration of public land within cooperative management areas would be turned over to the Colorado Division of Wildlife. The lower Colorado River is one of these areas. It has also been identified as an area of critical environmental concern because of the need for protection of important riparian and wildlife values. It is located within a land tenure retention zone and has been designated as a sensitive area for the placement of utility facilities.

Species of concern using the lower Colorado River include the bald eagle, great blue heron, waterfowl (especially Canada geese), resident species such as mule deer and other riparian-dependent species, and threatened or endangered fish such as the razorback sucker and, possibly, the humpback chub.

A habitat management plan for the area would be written which could include:

- Habitat enhancement through cottonwood, willow, and shrub plantings as well as grass and forb seedlings.
- Creation of additional wetland/riparian/pond habitat through sand and gravel mining.
- Exclusion of livestock grazing with fencing.
- Designations of areas where certain types of development would enhance habitat values, buffer zones around crucial habitat features where limited development could occur, and exclusion areas where any development would be detrimental to the existing wildlife needs.
- Applications of seasonal restrictions on development proposed for areas near crucial habitats.
- Placement of artificial nest boxes for Canada geese.
- Placement of artificial perches for bald eagles.

Table 3-4 shows actions proposed for terrestrial habitat management. Locations of these specific recommendations are shown on Maps 3-6, 3-12, 3-15, and 3-16.

Table 3-4. Summary of Terrestrial Wildlife Proposed Management Actions

Action	AUMs	Acres
Initial allocation of existing forage	46,210	
Vegetation manipulated to increase wildlife forage over a 20-year period		19,840
Expected increases in forage	6,383	
Total projected allocation	52,593	
Crucial big game winter range limited to off-road vehicle use (Map 3-15)		75,463
Habitat proposed for cooperative management with Colorado Division of Wildlife (Map 3-6)		9,710
Habitat proposed as an area of critical environmental concern (Map 3-12)		unknown

Rationale

The BLM is charged with managing wildlife habitat on public land to maintain or improve species diversity and to protect threatened and endangered species. Many of the businesses in the resource area are oriented toward and depend upon the income associated with wildlife-related activities such as hunting, camping, photography, and backpacking. Many other activities, such as road construction, mining, and timber harvesting, compete with wildlife for habitat. Therefore, the BLM's objective in this Proposed Plan was to maintain or improve habitat and wildlife species diversity and numbers.

The big game forage objective under the Preferred Alternative (DEIS) was existing big game use (5-year average). The objective under the Proposed Plan was changed to the 1988 Colorado Division of Wildlife Population Goals.

Existing forage was allocated to big game using the same method as used under the Preferred Alternative. However, in some allotments, existing forage exceeded existing use requirements for big game. Under the Preferred Alternative, the allocation of total available big game forage was limited within an allotment to existing big game use. Based on the new objectives, the Proposed Plan did not limit the allocation of available big game forage by allotment. This allowed a significant increase in the

amount of forage allocated to big game in some game management units. The allocation methodology under the Preferred Alternative did not recognize the mobility of big game animals. The Proposed Plan in this FEIS shows increases in available big game forage and, recognizing animal mobility, relates to forage needs by game management unit. Initial forage allocated to livestock was not affected by the increase in the big game allocation. This increase came from forage not suitable for livestock use.

Potential forage increases expected from vegetation manipulation were allocated using the same method as used under the Preferred Alternative. Increases on crucial winter ranges were allocated first to big game up to existing use. Increases on summer range were allocated first to livestock up to active preference and then to big game up to existing use. The approach maintains the emphasis of improving available forage for big game on crucial winter ranges, since winter range is the greatest limiting factor.

Livestock use was prohibited after October 15 (or when use of current annual growth of browse species reaches 20 percent, whichever occurs first) on most crucial winter ranges and after November 15 on other winter and summer ranges to reduce competition between livestock and big game.

Habitat improvement projects were proposed to improve habitat diversity, increase forage for big game (especially on crucial winter ranges), and improve existing habitat conditions. Habitat would be provided for wildlife species' introductions if requested by the Colorado Division of Wildlife and no significant conflicts with other resources were created. The designation of a bighorn sheep study area on the Grand Hogback resulted from comments on the DEIS and a need to consider additional information on the feasibility of an introduction. Seasonal off-road restrictions in selected crucial deer winter ranges were proposed to reduce stress during the crucial winter period.

Cooperative management of the public land identified on Map 3-6 with the Colorado Division of Wildlife was proposed to facilitate better administration of that land and to promote better habitat monitoring and increase habitat improvement opportunities.

Support

Fire management support would be needed for the planning and implementation of prescribed fire and the management of natural fire in meeting wildlife resource objectives. Engineering, hydrologic, soils, range, and archaeologic support would be required for project design and construction. Assistance from the Colorado Division of Wildlife would be required for activity plan development, implementation of habitat improvement projects, wildlife introductions, habitat monitoring, and cooperative management of public land. U. S. Forest Service cooperation would be needed for implementation of some habitat improvement projects such as prescribed burns. Acquisition of legal access to public land would be needed to open areas to terrestrial habitat management (see Transportation Map 3-16).

Implementation

Following approval of the Proposed Plan, terrestrial habitat management plans would be written for selected areas of wildlife habitat. The plans would include detailed information on species emphasis, management objectives, constraints, planned actions, coordination with other programs and agencies, environmental analysis, implementation schedule and cost analysis and evaluation procedures.

Emphasis would be placed on habitat for threatened and endangered species and crucial habitat for big game. A habitat management plan would be written in cooperation with the Colorado Division of Wildlife for the lower Colorado River. After determining land status in the river corridor, the BLM would propose to turn over management of this area to the Colorado Division of Wildlife.

A second habitat management plan would be written to define big game management opportunities in Game Managment Units 25, 26, 34, and 35. If a decision were made to introduce bighorn sheep on the Grand Hogback, a supplement to the Piceance Basin Habitat Management Plan would be written. Other management plans would be developed following implementation of these plans.

Sensitive habitats such as crucial big game winter range would be monitored for habitat condition changes and effectiveness of improvements. Monitoring studies would include browse use and pellet group transects.

Consistency

The objective of the Proposed Plan is to meet the goals expressed as part of the Colorado Division of Wildlife's Strategic Plan for 1988 for mule deer and elk. However, it appears that the projected population goals, which would require 53,933 AUMs of forage from public land, would not be fully met. The Proposed Plan is consistent with their goals for other species. The wildlife proposals in this Proposed Plan do not appear to be inconsistent with the plans and policies of the cities of

Aspen, Carbondale, and Glenwood Springs or with Pitkin and Garfield Counties. These proposals are beneficial to the economic stability of the local communities by providing for slight increases in big game populations.

Effects

The initial forage allocation would result in a 2.4 percent increase in big game throughout the resource area; however, decreases could occur in some game management units. The projected forage allocation, realized over a 20-year period of habitat improvement, would result in a 16.6 percent increase above existing numbers but would still be 9 percent short of meeting the Colorado Division of Wildlife goals.

Increases and decreases in hunting success and economic returns to local economies would be commensurate with increases and decreases in big game populations.

Wildlife conditions and species diversity would be maintained or improved throughout the resource area as a result of wildlife habitat projects, wildlife introductions, off-road vehicle restrictions, and season-of-use restrictions on livestock grazing.

Livestock Grazing Management

Objectives

→ To provide 56,885 animal-unit months (AUMs) of livestock forage to accommodate active livestock preference. Active livestock preference is that portion of the total preference for which grazing use may be authorized (see Glossary).

Proposed Management Actions

Level of Management. In 1980, the BLM tentatively selected allotments that could be managed intensively, either alone or in combination with adjacent allotments.

The criteria used to select allotments for intensive management were (1) size and land status (was there enough public land to have two or more pastures large enough to be economically feasible); (2) elevation, topography, and vegetation (were these similar enough to allow each pasture to be ready to use at approximately the same time); and (3) production potential (was there potential to increase forage).

Following is a listing by capability unit of those allotments selected for intensive management. Asterisks indicate the allotment is presently being managed under an allotment management plan. (Allotment boundaries are shown on Map 3-7.)

Garfield Capability Unit—8009, 8017, 8018, 8026, 8039, 8046, 8105*, 8106, 8107, 8213*, 8218, 8219, 8220, 8221, 8222*, 8908*, 8909, 8910*

Roaring Fork Capability Unit—8334, 8335, 8336, 8341, 8342

Eagle-Vail Capability Unit—8501, 8502, 8504, 8506, 8734*

Castle Peak Capability Unit— 8601*, 8606, 8616, 8619, 8620, 8639, 8641, 8642*, 8643*, 8730*, 8731*, 8732*, 8733*, 8735*

King Mountain Capability Unit—8506

Facilities such as springs, reservoirs, fences, corrals, and livestock trails would be constructed where necessary to control and distribute livestock. Appendix A (DEIS) lists range improvement techniques that could be used. Table 3-5 shows the number of projects associated with a typical 5,000-acre allotment.

Table 3-5. Typical Allotment Range Improvement Projects

Fence (miles)	Cattleguard	Corral	Stocktrail (miles)	Reservoir	Spring	Pipeline (miles)	Vegetation Manipulation (acres)	Seeding (acres)
10	1	1	.25	5	5	.75	400	100

These figures are based on averages of the eight existing allotment management plans in the resource area. They are for a complete allotment management plan and do not differentiate between existing and proposed improvements. Most allotment boundaries are shared with adjacent allotments and are presently fenced. Total miles of fence would depend on number of pastures and natural barriers. Water developments would depend on availability and distribution of springs and potential reservoir sites. Cattleguards would be used on well-travelled roads. Stocktrails to aid in livestock movement would be needed wherever dense vegetation or steep slopes exist.

Forage Allocation. Initially, 37,852 AUMs of existing forage would be allocated for livestock use (Table 3-6). Initial allocation would be the same as that in the DEIS Preferred Alternative. However, some numbers have changed because mathematical errors in the DEIS Preferred Alternative tables have been corrected.

Table 3-6. Summary of Livestock Forage Allocation

Allocation	AUMs	Percent Change from Existing Use	Percent Change from Active Preference
Existing use	37,488		
Initial allocation	37,852	+1	−33
Expected increase from vegetation manipulation	12,742		
Projected allocation—existing plus expected increases	50,594	+35	−11
Additional forage from unallotted allotments	756		

Existing forage would be allocated proportionately to livestock and big game, the criterion being active preference for livestock and 5-year average demand for big game. Both would be constrained by initial stocking rate limitations. All available forage on allotments in big game winter range unavailable to livestock because of stocking rate limitations or slope restrictions would be allocated to big game. Forage available beyond active preference and 5-year average on big game summer ranges would be available for wildlife but limited by allotment to Colorado Division of Wildlife goals. (Summer range is not limiting to big game; therefore, allocating forage beyond Colorado Division of Wildlife population goals in summer range would be unnecessary since winter range is what limits herd size.)

Additional forage produced through vegetation manipulation on wildlife winter range would first be allocated to big game to meet existing use (5-year average) and then to livestock up to active preference. On summer range, additional forage would be allocated to livestock first.

Following initial allocation, 27,800 acres of vegetation on 98 allotments would be manipulated to increase livestock forage by 12,742 AUMs using vegetation manipulation techniques listed in Appendix A (DEIS). The resultant total projected allocation would be 50,594 AUMs. The 27,800 acres identified for manipulation was determined from range site potential and soil suitability and adjusted according to the livestock forage goal by allotment. In addition, 24 unallotted allotments (Table F-3, Appendix F, DEIS) would have 756 AUMs made available for livestock use. Table 3-7 shows allocation by allotment for both livestock and wildlife. Additionally, any increases in forage due only to improved grazing management would be allocated to livestock.

Table 3-7. Livestock and Wildlife Preference, Use, and Allocation by Allotment

(in animal-unit months)

Allotment Number and Name		Livestock					Wildlife			
		Preference		Existing Use (5-Year Average)[1]	Initial Allocation[2]	Projected Allocation[3]	Objective[4]	Existing Use (5-Year Average)[5]	Initial Allocation[2]	Projected Allocation[3]
		Total	Active							
	Garfield Capability Unit									
→	8001 Sample	15	15	15	0	0	30	21	51	51
	8002 Reed	50	49	0	28	49	37	27	65	65
→	8003 Kissel	44	44	24	36	36	122	102	170	170
→	8004 Bowen Isolated Tracts	44	38	35	23	23	14	10	14	14
	8005 Doak	309	83	63	51	83	27	21	27	27
	8006 Cedar Mountain	265	255	129	255	255	430	337	430	430
	8007 Rifle	157	76	15	76	76	220	157	220	220
	8008 Jackson	31	31	6	6	31	23	17	23	23
	8009 Weaver	900	300	180	162	162	731	558	314	554
→	8010 East Cedar Mountain	829	128	96	96	108	311	217	164	217
→	8011 Middle Rifle	65	60	35	47	47	85	69	85	85
	8012 Brush Creek Common	415	396	275	119	396	1,182	932	846	932
	8013 Harris Gulch	1,200	1,138	275	142	538	323	247	314	314
	8014 Graham	26	26	24	26	26	24	22	24	24
	8015 Hayden	176	176	88	23	97	35	29	38	38
	8016 Southwest Rifle Creek	400	371	53	93	371	230	192	230	230
	8017 Lundgren-Hogback	229	121	86	58	121	155	109	155	155
	8018 Horse Mountain-Brush Creek	1,360	1,095	365	368	457	1,043	790	444	790
	8019 Morrow	125	74	59	17	49	37	31	37	37
	8020 Coal Mine	14	14	.....	1	1	4	3	4	4
	8021 Watts	375	183	183	128	183	116	89	63	89
	8022 Simpson and Nichols	380	105	105	43	105	67	56	76	76
	8023 Government Creek Isolated	10	8	8	4	4	7	5	2	2
	8024 Ryden	234	88	88	45	88	222	174	141	174
	8025 Dodo	36	36	29	31	36	333	258	227	258
	8026 Hogback Common	443	303	265	120	236	202	141	147	147
	8027 Roberts	22	22	18	7	7	23	19	6	6
	8028 Red Mountain	60	44	29	44	44	106	73	93	93
→	8029 Pretti-Roberts	414	394	124	60	60	199	138	89	89
→	8030 Castle	150	60	40	51	51	115	76	65	65
	8031 Hill	43	43	34	18	18	43	28	27	27
→	8032 Elk Park Common	292	271	29	103	197	222	155	110	155
→	8033 Brosius Gulch	118	75	30	42	42	136	94	59	59
→	8034 Harvey Gap 1	54	54	8	19	19	36	25	21	21
	8035 Harvey Gap 2	180	180	16	90	90	229	159	80	80
	8036 Jewell	48	32	32	27	27	45	28	24	24
	8037 Scutter Gulch	36	16	16	15	15	37	23	22	22
	8038 Wittwer	7	4	4	2	2	8	5	2	2
→	8039 Government Creek Common	991	991	296	356	655	735	501	434	501
	8040 Middle Elk	.....	.....	.....	.....	0	137	98	98	98
	8041 Andgee	.....	.....	.....	14	14	79	55	66	66
	8042 Chirp	.....	.....	.....	18	18	32	24	42	42

8043	Butler Creek	.....	.....	.....	62	62	82	60	122	122
8044	Rifle Gap	.....	.....	.....	181	181	212	152	454	454
8045	North Hogback	.....	.....	.....	37	37	94	59	96	96
8046	Jackson Gulch	150	150	90	124	150	156	130	127	130
8201	Kaiser Hells Hole	29	29	23	18	18	63	54	63	63
8202	Possum Creek	417	417	266	280	417	132	107	132	132
8203	Storm King	272	272	178	272	272	403	328	403	403
8204	Storm King-Dolan Gulch	18	9	2	7	7	21	17	21	21
8207	Canyon Creek	146	146	130	146	146	111	91	111	111
8208	Bearwallow and Jolley	665	665	507	262	665	337	293	703	703
8209	Bearwallow-Jolley-Harris	114	114	84	59	114	157	119	113	119
8210	Boiler Creek	70	70	85	70	70	314	242	504	504
8211	Dietz	45	45	30	45	45	203	158	248	248
8259	Possum Creek Driveway	45	45	16	5	27	59	47	108	108
8228	Canyon Creek	51	51	51	37	37	64	53	265	265
8101	Kamm Mesa	56	56	8	40	56	98	76	55	76
8102	Whitman	182	63	63	50	63	71	54	54	54
8103	Oates	40	40	19	38	38	96	69	64	64
8104	Beaver-Mamm Common	1,348	632	596	458	632	217	171	217	217
8105	East Divide Common	3,368	2,362	947	2,271	2,362	974	763	1,378	1,378
8106	Scott	165	120	44	85	85	55	43	88	88
8107	Dean Gulch	126	126	76	53	78	66	50	66	66
8108	Smith (lease)	18	18	10	18	18	17	13	17	17
8109	Barr	.....	.....	.....	4	4	24	18	22	22
8110	Kinney Brothers Individual	13	6	4	4	4	5	4	5	5
8111	Shideler	14	14	14	11	11	17	14	14	14
8112	Grass Mesa	83	49	49	27	27	69	51	28	28
8113	Beaver Creek	41	41	41	41	41	30	27	30	30
8114	Franks	37	9	8	9	9	19	15	127	127
8115	Couey 1	4	4	4	3	3	15	14	11	11
8116	Shideler Individual	8	8	8	4	4	10	10	6	6
8117	Pitman	309	146	140	146	146	60	49	60	60
8118	Couey 2	18	18	17	18	18	4	3	20	20
8119	Porcupine Common	495	288	219	194	288	89	68	89	89
8120	Porcupine Individual	28	28	0	7	7	10	7	10	10
8121	Spruce Gulch Common	174	174	97	174	174	69	52	69	69
8122	Smith	150	98	98	19	77	13	11	27	27
8123	Hoaglund	30	17	17	17	17	26	20	24	24
8124	Battlement Creek Common	356	303	152	303	303	146	115	146	146
8125	Dry Creek Pete and Bill	430	372	207	340	372	403	312	763	763
8126	Pole Creek and Cottonwood	122	115	79	96	115	139	108	86	108
8127	Dry Hollow-Reservoir Gulch	923	759	401	501	759	486	387	628	628
8128	Middle Mamm Creek	546	163	158	163	163	89	71	259	259
8129	Upper Wallace Common	160	160	91	160	160	194	156	194	194
8130	Alkali Creek Common	391	200	133	84	128	178	140	96	140
8131	Alkali Gulch	246	160	113	53	53	127	95	77	77
8213	Vulcan	161	161	118	98	161	120	93	219	219
8214	Alkali Creek	168	168	112	132	168	28	23	28	28
8215	Larsen	8	8	6	8	8	7	6	7	7
8216	Delaney	60	60	42	60	60	23	19	23	23
8218	Horse Creek	84	84	0	84	84	110	85	86	86
8219	Bair	61	61	21	39	60	66	50	32	50
8220	Lower Garfield Common	83	83	41	75	75	91	71	65	65
8221	Hilton Individual	12	12	9	12	12	37	27	61	61

Table 3-7. Livestock and Wildlife Preference, Use, and Allocation by Allotment—Continued

(in animal-unit months)

Allotment Number and Name		Livestock					Wildlife			
		Preference		Existing Use (5-Year Average)[1]	Initial Allocation[2]	Projected Allocation[3]	Objective[4]	Existing Use (5-Year Average)[5]	Initial Allocation[2]	Projected Allocation[3]
		Total	Active							
8222	Upper Garfield Common	2,375	1,496	1,031	624	1,496	197	172	197	197
8223	Larson (exchange of use)						7	6	7	7
8224	Hilton-Porter Common	180	180	182	158	158	86	67	59	59
8225	Hilton 1	95	95	76	53	53	50	39	45	45
8226	Hilton 2	7	7	6	7	7	3	3	3	3
8227	Skeen	25	25	15	5	5	15	15	10	10
8901	Magpie Creek	76	56	46	56	56	169	121	169	169
8902	Webster Park	700	700	309	566	700	678	482	393	482
8903	Hubbard Mesa	830	760	382	248	262	594	427	292	427
8904	Home Ranch	232	0	0	33	33	89	63	22	59
8905	Doodlebug	45	45	27	37	37	37	28	37	37
8907	Rees	687	475	275	475	475	367	268	313	313
8908	JQS Common	5,493	3,963	2,624	1,484	3,963	506	380	506	506
8909	Clough-Alber	1,926	1,090	724	1,090	1,090	258	193	258	258
8910	East Fork Common	3,393	2,064	1,707	1,227	2,064	404	302	404	404
8912	Sharrade Park	40	23	0	23	23	225	160	195	195
8913	Mahaffey Summer	1,110	684	456	505	684	122	92	122	122
8914	Old Mountain	654	399	245	198	399	60	45	60	60
8916	Crawford and Kerlee	10	10	8	0	0	35	26	137	137
8917	Starkey Gulch	77	77	61	1	1	9	9	29	29
8918	Wheeler Gulch	124	124	45	8	8	48	37	52	52
8919	Callahan Mountain Common	188	96	30	80	80	172	124	101	101
8920	Riley Gulch	123	123	87	51	123	44	34	100	100
8922	Smith Gulch	200	200	121	142	169	222	156	111	156
8923	Mahaffey Winter 1 and 2									
8924	Mahaffey Winter 3	1,577	678	617	668	668	324	234	783	783
	Subtotal	43,254	30,112	17,965	17,791	26,156	19,619	14,866	18,675	20,022
	Roaring Fork Capability Unit									
8205	Mitchell-Oasis	154	154	130	154	154	175	140	175	175
8206	Oasis Creek	100	100	58	100	100	105	86	105	105
8212	Paradise Creek	200	200	200	200	200	240	151	240	240
8217	South Canyon	300	300	135	231	300	129	94	129	129
8301	Cottonwood	552	552	264	119	346	80	64	80	80
8302	Cattle Creek Driveway	333	180	175	98	180	33	26	26	26
8303	Bianco	6	6	6	6	6	5	4	5	5
8304	Upper Place	24	24	3	20	20	3	3	3	3
8305	Squires	3	3	3	3	3	8	8	8	8
8306	Gould	101	101	43	82	82	37	30	35	35
8307	Coryell	13	13	8	13	13	10	8	10	10
8308	Driveway Common	300	300	123	194	300	160	133	133	133
8309	Homestead	60	60	12	26	60	18	15	18	18
8310	Lower Place	64	64	64	19	64	21	16	18	18

→	8311	Prectel	60	60	12	16	46	11	9	34	34
	8312	Hopkins	20	20	20	20	20	27	26	27	27
	8313	Lookout Mountain	338	301	0	301	301	123	100	110	110
	8314	Heuschkel	28	28	22	28	28	30	21	21	21
	8315	Doyal	10	10	10	10	10	10	7	7	7
	8316	West Basalt Mountain	295	286	186	169	286	524	394	233	394
	8317	Haff Ranch	24	24	12	9	24	89	64	23	64
→	8318	Badlands	75	75	0	33	75	253	179	77	179
	8319	Petre				33	33	207	146	80	128
	8320	Sutey	55	55	44	22	55	344	246	102	246
	8321	Strook Individual	73	54	1	13	40	137	97	24	97
	8322	Rodgers	19	19	4	8	19	33	25	10	25
	8323	Diamond Flats Common	589	589	242	232	431	89	59	268	268
	8324	Driveway	386	386	170	114	293	38	25	38	38
	8325	Motz				21	21	61	38	97	97
	8326	Motz				26	26	37	23	82	82
	8327	Fryingpan	72	72	14	38	72	199	150	82	150
	8328	Wheatley	121	84	29	42	55	600	469	241	469
	8329	Fender	67	67	60	67	67	99	64	137	137
	8330	Light Hill				88	88	283	161	249	249
	8331	Light	472	262	167	262	262	277	182	458	458
	8332	Kent				21	21	138	94	63	63
	8333	Christensen				0	0	204	141	85	141
	8334	Crown Common	388	344	329	344	344	563	368	568	568
→	8335	Crown	590	267	90	236	267	548	360	312	360
	8336	Vasten Homestead Common	249	243	241	107	243	178	115	143	143
	8337	Crown Individual	256	151	75	122	151	254	166	134	166
	8338	Driveway Common	93	93	88	32	93	18	13	18	18
→	8339	Fender Individual	65	65	65	59	59	109	73	73	73
	8340	Cerise	180	108	43	108	108	70	46	118	118
	8341	Prince Creek	570	337	160	238	337	495	322	327	327
	8342	Crystal River	750	445	89	264	445	883	566	335	566
	8343	Thompson Creek	254	243	0	158	243	553	353	360	360
→	8344	Mount Sopris	32	32	31	29	29	115	74	69	69
	8345	Prince				3		13	10	10	10
	8346	Thomas	83	83	79	83	83	156	101	168	168
	8347	Potato Bill	16	16	13	16	16	14	9	14	14
→	8348	North Thompson Creek Common	757	593	457	288	593	648	412	473	473
	8349	Red Canyon	90	80	68	12	56	158	124	134	134
→	8350	Little Woody Creek	99	99	77	23	55	258	200	190	200
	8351	Williams Hill				0	0	246	169	79	169
	8352	Stevenson	90	90	54	63	90	520	330	239	330
	8353	Smith				45	45	57	36	117	117
	8401	Besancon Creek				1	1	4	4	5	5
	8402	Cantly Homestead	17	17	17	17	17	17	11	17	17
	8411	Snowmass Creek	20	20	20	13	13	2	2	1	1
→	Subtotal		9,513	7,775	4,213	4,861	7,150	10,716	7,362	7,437	8,875
		Eagle-Vail Capability Unit									
	8501	Third Gulch	25	25	25	25	25	61	45	45	45
	8502	East Hardscrabble Common	879	870	685	870	870	1,041	868	1,041	1,041
	8503	Brush Creek	9	9	3	9	9	6	4	4	4
	8504	West Hardscrabble	1,171	1,157	822	800	845	2,141	1,660	1,150	1,660
	8505	Eagle River	16	16	12	10	10	11	10	6	6

Table 3-7. Livestock and Wildlife Preference, Use, and Allocation by Allotment—Continued

(in animal-unit months)

Allotment Number and Name		Livestock					Wildlife			
		Preference		Existing Use (5-Year Average)[1]	Initial Allocation[2]	Projected Allocation[3]	Objective[4]	Existing Use (5-Year Average)[5]	Initial Allocation[2]	Projected Allocation[3]
		Total	Active							
8506	Cottonwood Creek Etc.	787	787	747	787	787	825	616	825	825
8507	Red Hill Common	778	628	583	598	628	1,430	1,114	1,430	1,430
8508	Cottonwood Creek	80	80	80	32	80	28	21	21	21
8707	Ute Creek	430	266	106	250	266	546	430	407	430
8710	Walcott Isolated Tract	174	40	16	30	30	10	7	17	17
8712	North Bellyache	180	180	180	130	180	387	295	212	295
8716	Williams Individual	30	30	6	30	30	26	28	32	32
8718	Lake Creek	18	18	11	9	9	17	14	7	7
8719	Horse Creek	44	44	44	28	28	26	21	13	13
8720	Fenno	25	25	23	5	5	27	27	7	7
8721	Salt Creek-Bellyache	368	249	241	132	184	849	670	358	670
8722	Salt Creek-Forest	153	64	56	29	64	55	43	88	88
8723	Falk	9	9	9	9	9	16	13	45	45
8727	Squaw Creek	.....	.....	.....	10	10	15	11	11	11
8728	Red Canyon	.....	.....	.....	22	22	40	33	29	29
8734	Bellyache	18	18	2	7	7	40	30	41	41
	Subtotal	5,194	4,515	3,651	3,790	4,066	7,597	5,960	5,789	6,717
	Castle Peak Capability Unit									
8601	East Castle	2,316	2,316	2,799	2,316	2,316	318	273	318	318
8604	Detweiler	36	36	36	36	36	3	3	3	3
8605	River-Catamount	75	75	75	75	75	141	114	123	123
8606	Piskey	545	430	155	430	430	524	419	524	524
8607	Wheelock Individual Large	43	43	18	43	43	4	4	4	4
8608	Wheelock Individual Small	9	9	5	9	9	1	1	1	1
8609	Castle Creek Individual	170	170	170	170	170	18	15	18	18
8616	Deer Pen	900	900	406	703	757	351	303	454	454
8617	Newcomer	4	4	4	4	4	10	9	16	16
8619	Catamount Common	886	886	886	886	886	494	481	494	494
8620	West Castle Common	522	522	522	522	522	591	499	591	591
8621	Castle	15	15	15	15	15	20	17	20	20
8622	West Castle Peak	7	7	4	7	7	9	8	9	9
8623	East Castle Peak	48	48	21	48	48	16	13	13	13
8225	Bull Bulch Common	360	360	360	360	360	623	576	1,190	1,190
8638	Eiby Creek	112	112	38	112	112	100	80	116	116
8639	Upper Cottonwood	265	214	171	149	214	39	31	39	39
8641	Greenhorn	860	860	517	473	860	642	520	534	573
8642	Trail Gulch	655	321	128	321	321	651	573	1,012	1,012
8643	Blowout	535	535	379	535	535	683	558	683	683
8701	Piney Creek	45	45	10	13	13	25	25	27	27
8702	Wolcott	974	974	263	788	974	523	429	354	429
8729	Pocket	.....	.....	.....	0	0	292	234	168	189
8730	Bocco Mountain	290	290	250	254	254	505	342	223	254

→	8731	Cabin Gulch	340	340	336	240	340	117	94	68	94
	8732	Diamond J	26	26	3	19	26	86	68	20	68
	8733	Domantle	65	65	52	36	65	8	7	7	7
→	8735	Hells Hole	34	34	8	29	29	62	49	49	49
→		Subtotal	10,137	9,637	7,631	8,593	9,421	6,856	5,745	7,078	7,318
		King Mountain Capability Unit									
	8506	Cottonwood Creek (Burnt Ridge)	168	168	168	152	168	383	356	323	356
	8602	L and H Individual	76	76	30	29	29	307	264	105	192
	8603	Tepee Creek	27	27	27	8	8	569	489	146	183
	8610	East Sunnyside	20	20	19	4	4	38	33	5	5
	8611	Sunnyside Individual	100	100	100	62	62	1,087	960	441	488
	8612	West Sunnyside	24	24	23	19	19	45	38	29	29
	8613	Sunnyside	25	25	25	15	15	467	395	214	302
	8614	Spring Creek	125	125	125	60	60	275	225	111	164
	8615	River Common	125	38	38	38	38	595	446	373	429
→	8618	Derby Ridge	100	40	27	28	28	25	23	16	16
	8626	Red Dirt	50	50	50	43	50	528	456	387	456
	8627	Sugarloaf	50	50	24	50	50	30	27	30	30
	8628	Sheep Creek (Colorado Division of Wildlife)				125	125	956	861	790	790
	8629	Willow Creek	126	126	57	62	62	769	648	327	467
	8630	Irrigated Land-Trail Gulch	132	132	79	132	132	2	5	0	0
	8631	Horse Creek	76	76	16	30	30	603	504	199	199
→	8632	Upper Little Sheep Creek	338	153	71	77	134	52	46	20	46
	8633	Upper Hack Creek	384	300	120	300	300	350	313	350	350
	8634	Three Springs	60	60	48	50	60	196	147	121	147
→	8635	Mooney	30	30	24	22	22	35	26	19	19
	8636	McKeen Creek	105	105	84	92	92	24	20	24	24
	8637	South McKeen Creek	8	8	4	8	8	5	4	5	5
	8644	Moniger Ridge	34	34	26	34	34	116	86	63	63
	8645	Upper and Lower Jack Spring	50	50	47	22	22	7	7	7	7
	8646	Moniger Ridge Skiff	27	27	27	27	27	34	27	34	34
	8647	Onion Ridge	930	477	372	203	477	1,602	1,282	551	1,282
→	8648	Upper Coffeepot	72	72	44	40	72	54	50	54	54
	8649	Lower Coffeepot	394	324	224	207	324	774	689	440	689
	8652	McCoy				0	0	87	75	18	18
	8653	Albertson	186	186	186	35	35	62	58	58	58
	8654	Benton	162	162	162	162	162	279	245	270	270
	8655	Dude	4	4	4	1	1	52	44	12	12
	8656	Gates	13	13	13	10	10	9	8	6	6
	8657	Hastings	7	7	7	3	3	54	47	20	20
	8658	Holt	105	105	105	81	81	209	190	161	182
	8659	Horn	249	249	249	96	96	126	109	42	109
	8661	L and H	343	343	343	161	343	820	727	316	727
	8662	Black Mountain	109	109	109	32	109	25	21	25	25
	8663	McSweeney	53	53	53	53	53	93	84	93	93
	8665	Strubi	30	30	30	30	30	15	13	15	15
→	8666	Visintainer	488	488	488	100	303	422	359	262	359
	8667	Bambi	42	42	42	42	42	105	85	320	320
→	8668	Copper Spur	211	211	211	138	138	133	115	160	160
	8695	Old 8660 and 8670				45	45	3	2		
	8672	Luark	127	127	127	59	59	723	578	269	461
→		Subtotal	5,785	4,846	4,028	2,817	3,801	13,145	11,187	7,231	9,661

Table 3-7. Livestock and Wildlife Preference, Use, and Allocation by Allotment—Continued

(in animal-unit months)

Allotment Number and Name	Livestock					Wildlife			
	Preference		Existing Use (5-Year Average)[1]	Initial Allocation[2]	Projected Allocation[3]	Objective[4]	Existing Use (5-Year Average)[5]	Initial Allocation[2]	Projected Allocation[3]
	Total	Active							
→ Total	73,883	56,885	37,488	37,852	50,594	57,933	45,120	46,210	52,593

[1]The 5-year average licensed use from 1975-79.
[2]Initial allocation of existing forage to livestock or wildlife.
[3]Allocation of existing forage plus estimated additional forage expected from vegetation manipulation.
[4]Colorado Division of Wildlife Goals for 1988.
[5]Estimated average wildlife populations in 1976-80.

Season-of-Use Adjustments. Fifty-three allotments would be affected by season-of-use adjustments (see Description of Proposed Plan, Terrestrial Habitat Management section). Following is a listing of those allotments that would be affected.

Allotments affected by October 15 cut-off date (wildlife crucial winter range)—8005, 8011, 8012, 8103, 8107, 8112, 8115, 8117, 8118, 8120, 8121, 8125, 8213, 8218, 8219, 8316, 8321, 8322, 8331, 8342, 8343, 8349, 8352, 8504, 8506, 8602, 8612, 8632, 8635, 8642, 8647, 8649, 8654, 8655, 8657, 8658, 8659, 8661, 8667, 8668, 8672, 8901, 8907, 8920.

Allotments affected by November 15 cut-off date (wildlife winter and summer range)—8506, 8601, 8653, 8656, 8662, 8663, 8665, 8666, 8701.

Spring turnout dates for many allotments are presently determined annually based on range readiness. More emphasis would be placed on range readiness during implementation of the plan with adjustments based on monitoring if turnout dates were found to be consistently early.

Rationale

Active preference was chosen over *existing use* and *total preference* as the objective for livestock grazing in this Proposed Plan. (This objective is the same as the objective in the DEIS Preferred Alternative.)

Based on present production estimates and potential for increasing forage in many allotments, it was felt that *existing use* (the number of AUMs licensed from 1975 to 1979) may have been disproportionately low because many ranchers were taking voluntary nonuse. It was also felt that *total preference* (the use that was apportioned and attached to base properties) might not be attainable because total preference in some instances is based on historic use as well as carrying capacity.

It must be noted here that while forage production estimates indicate *active preference* may be a more realistic or attainable level of livestock grazing than *existing use* or *total preference*, only through monitoring will BLM be able to determine whether or not this level is correct. Therefore, no final forage allocation decisions will be made until after monitoring is conducted on allotments in question to determine correct stocking rates.

Existing forage was allocated to livestock by the same method as used in the DEIS Preferred Alternative. However, in crucial winter range areas, livestock were allocated existing forage up to active preference only after wildlife were given sufficient forage to meet existing use (5-year average).

Potential forage increases expected from vegetation manipulation were allocated using the same method as used in the DEIS Preferred Alternative. Increases on crucial winter ranges were allocated first to big game up to existing use and then to livestock up to active preference. Increases on summer range were allocated first to livestock up to active preference and then to big game up to existing use.

Support

Engineering and fire management support would be required for project layout, design, and implementation. The U. S. Forest Service and Colorado Division of Wildlife would be consulted on allotments managed cooperatively and projects of mutual benefit, especially prescribed burns. Water rights would have to be secured for all water developments. Acquisition of legal access to public land would be needed to open areas to livestock grazing management (see Transportation Map 3-16).

Implementation

Implementing and monitoring the livestock grazing portion of the Proposed Plan would require several separate actions that overlap in time, some of which are already underway. These actions include (1) allotment categorization; (2) grazing use decisions and monitoring to determine stocking rates; (3) allotment management plans; and (4) monitoring to determine if selective management (allotment categorization) criteria are being met.

Allotment Categorization. Concurrent with the development of this Proposed Plan, grazing allotments are being placed into one of three categories that define how they will be managed: (1) *maintain* current satisfactory condition, (2) *improve* current unsatisfactory condition, and (3) manage *custodially* while protecting existing resource values. These categories would help to concentrate grazing management actions where they are most needed to improve the basic resources or resolve serious resource use conflicts.

The categories would govern the order in which improvement projects are undertaken and allotment management plans written. First priority would be allotments in *improve* category; second, in *maintain* category; and third, *custodial* category.

The categorization of allotments would be presented in the rangeland program summary published within 5 months of the FEIS and following rancher consultation. Decisions on allotments in the *maintain* category would be issued within 9 months following publication of the FEIS; decisions on allot-

ments in the *custodial* category, within 12 months; and decisions on allotments in the *improve* category, within 17 months. This policy is detailed in Washington Office Instruction Memorandum 82-292, dated March 5, 1982, and is referred to as *selective management.*

The five standard criteria being used to categorize allotments are range condition, resource potential and present productivity, presence of resource use conflicts or controversy, opportunity for positive economic return on public investment, and present management situation. Comments solicited from the general public, ranchers, and the District's Grazing Advisory Board would be used to help refine the BLM's five standard criteria to fit the local situation and to develop other site-specific criteria as necessary.

1. Maintain Category Criteria:

- Present range condition is satisfactory.
- Allotments have moderate or high resource production potential and are producing near their potential (or trend is moving in that direction).
- No serious resource-use conflicts or controversy exists.
- Opportunities may exist for positive economic return from public investments.
- Present management appears satisfactory.
- Other criteria appropriate to environmental impact statement area.

2. Improve Category Criteria:

- Present range condition is unsatisfactory.
- Allotments have moderate to high resource production potential and are producing at low to moderate levels.
- Serious resource-use conflicts or controversy exists.
- Opportunities may exist for positive economic return from public investments.
- Present management appears unsatisfactory.
- Other criteria appropriate to environmental impact statement area.

3. Custodial Category Criteria:

- Present range condition is not a factor.
- Allotments have low resource production potential and are producing near their potential.
- Limited resource-use conflicts or controversy exist.
- Opportunities for positive economic return from public investments do not exist or are constrained by technological or economic factors.
- Present management appears satisfactory or is the only logical practice under existing resource conditions.
- Other criteria appropriate to environmental impact statement area.

Grazing Decisions and Monitoring. Soil Vegetation Inventory Method (SVIM) and Initial Stocking Rate programs were used to develop BLM estimated initial stocking rates for each allotment. Prior to issuing grazing decisions, permittees would be contacted to discuss how their allotments are categorized and explain the criteria used. Initial stocking rates for each allotment based on estimated initial stocking rates, average licensed use, and active preference would also be determined at that time.

If no adjustments in stocking rate were necessary or if reductions were mutually agreed upon, the BLM would issue the final grazing decision without monitoring. However, in cases of disagreement, the BLM would issue an initial decision and monitor the allotment to determine the proper stocking rate prior to issuing the final decision. The initial decision and the monitoring program to arrive at the stocking rate would be published in the rangeland program summary mentioned above.

Grazing would begin at an agreed upon level and would be monitored for two years. Prior to the third season, adjustments (up or down) would be made, if necessary, based on the monitoring. Following two more seasons of grazing and prior to the fifth year, further adjustments would be made, if necessary, and stated in a final grazing decision. The monitoring programs would also be used to determine the effectiveness of fall cut-off and spring turnout dates.

Monitoring studies to establish stocking rates would include forage use, actual use reports from each permittee, climate, and vegetation condition and trend studies. The utilization studies would include browse use in wildlife ranges. Pellet group transects might also be used to help determine wildlife use in the area. Trend and utilization transects are already established on 38 allotments. Browse transects are in place on 17 allotments.

Wildlife habitat monitoring would enable BLM to make big game population adjustment recommendations to the Colorado Division of Wildlife.

Allotment Management Plans. Allotment management plans (AMPs) prescribing grazing management activities would be written and implemented on allotments in accordance with priorities established in the final resource management plan and rangeland program summary. AMPs would establish objectives for managing soil, vegetation, and water resources to improve or maintain resource condi-

tions and resolve livestock grazing management problems consistent with land use plan objectives and constraints. The AMPs would specify the terms, conditions, and methods or practices permitted to meet the requirements of the key plant species, prevent soil disturbance, and meet water quality requirements within the allotments. The sophistication of an AMP might vary depending on resource conditions and the objectives of other resources identified in the land use plan. AMPs would include the limits of flexibility within which permittees or lessees can adjust their grazing operation without prior approval from the authorized officer and specify the types and amount of range improvements that would be necessary to support livestock grazing activities. All AMPs would be periodically evaluated to determine whether resource management plan and AMP objectives were being achieved and to assess resource conditons. AMPs might be revised if the evaluation shows that the objectives were not being achieved.

Monitoring for Selective Management Criteria. A supervision and monitoring plan would be developed to ensure that allotments within each category—maintain, improve, and custodial—were checked periodically to determine resource conditions and whether criteria were still being met.

Consistency

Allowing livestock grazing on public land is consistent with the counties' and state's concerns for maintaining a diverse economic base. It also coincides with the counties' plans to maintain an agricultural and rural setting.

Effects

Initial forage allocations would result in a 1 percent increase above existing use resource area wide; however, this would also be a 33 percent decrease from active preference (the goal of the Proposed Plan). The projected long-term allocation would result in a 35 percent increase above existing use but would still fall 11 percent short of active preference (the goal of the Proposed Plan).

These percentages are resource area wide with some individual allotment allocations varying significantly (see Table 3-6). The fall cut-off dates of October 15 and November 15 would require permittees of the 53 allotments to acquire forage elsewhere during that period of time.

Forest Management

Changes in BLM forest management policies have occurred since the draft environmental impact statement was issued. In the draft environmental impact statement, productive forest land was the designation for all sawtimber species, regardless of markets. Woodland represented only pinyon-juniper. The new policy statement defines all commercial coniferous sawtimber species as commercial forest land. Woodland is typified by tree species that are used as nonsawtimber products such as fuelwood or posts. Aspen and subalpine fir are used as nonsawtimber products and are considered woodland species along with pinyon pine and juniper in the Proposed Plan. See the Glossary for definitions of these terms.

Objective

To manage all suitable commercial forest land and woodland to meet sawtimber and fuelwood demand and maintain stand productivity.

Proposed Management Actions

Commercial forest land and woodland would be identified as either suitable or unsuitable for management (Table 3-8).

Map 3-8 shows locations of forest land suitable for management. All forest land supporting commercial forest land and woodland species, including the five forest management units (King Mountain, Black Mountain, Castle Peak, Seven Hermits and Naval Oil Shale Reserve), would be managed. Major commercial species include lodgepole pine, Engelmann spruce, Douglas-fir, and ponderosa pine (commercial forest land) and pinyon and juniper (woodland). Aspen and subalpine fir are not currently considered major commercial species.

Forest land would be managed to minimize losses of, or damage to, forest resources from insects and disease. Practices that would be used in managing the suitable forest land are listed in Appendix A, DEIS. Multiple use and timber production capability classification restrictions prohibiting the harvesting of both commercial forest land and woodland are shown in Table 3-9.

The estimated annual allowable woodland harvest of 6,465 cords includes aspen and subalpine fir fuelwood for which little demand has been realized. Since the present domestic and commercial demand for fuelwood (1,800 cords annually) has been limited almost exclusively to pinyon-juniper, it is expected that actual harvests would be consider-

Table 3-8. Summary of Proposed Forest Management Actions

Proposed Management Actions	Commercial Forest Land[1]		Woodland[2]	
	(acres)	(million board feet)	(acres)	(cords)
Suitable for management	17,905		82,470	
Unsuitable for management[3]	27,735		131,840	
Annual allowable harvest		1.8		6,465

[1]Includes lodgepole pine, Engelmann spruce, Douglas-fir, and ponderosa pine.
[2]Includes pinyon pine and juniper (3,535 cords), aspen (2,790 cords), and subalpine fir (140 cords).
[3]Based on multiple use and timber production capability classification restrictions.
Note: With the completion of the timber production capability classification, revision in the annual allowable harvest may be necessary.

ably less than 6,456 cords. However, the harvest level of 6,465 cords is presented as an optimum level for a sustained yield woodland management program. The fuelwood market and demand for domestic wood would guide the actual harvest of woodland products. It is assumed that the majority of fuelwood sold would consist of pinyon-juniper based on past demands. Initial sales of aspen fuelwood would be considered in an attempt to spur the aspen market and improve wildlife habitat and possibly result in temporary increases in water yields.

Table 3-9. Commercial Forest Land and Woodland Multiple Use Restrictions

Capability Unit	Acres	Reason Unsuitable for Harvest
Garfield	71,085	Municipal watersheds; debris flow hazard zone; highly erosive soils; recreational non-motorized zones
Roaring Fork	12,945	Debris flow hazard zones; Thompson Creek Natural Environment Area; Eagle Mountain Wilderness Study Area; highly erosive soils
Eagle-Vail	14,005	Highly erosive soils
Castle Peak	34,910	Bull Gulch Wilderness Study Area; highly erosive soils
King Mountain	26,630	Hack Lake Wilderness Study Area and recreational non-motorized zone; Deep Creek Area of Critical Environmental Concern; highly erosive soils
Total	159,575	

Rationale

To assure a continuous supply of forest products for available markets, annual allowable harvests for both sawtimber and fuelwood were established. Under the Proposed Plan, the commercial forest land allowable harvest was based on harvesting commercial coniferous species such as Engelmann spruce, lodgepole pine, ponderosa pine, and Douglas-fir. This harvest level is the same as the Preferred Alternative (DEIS). Five forest management units were identified. In these units, commercial stands requiring harvest methods other than those conventional ground skidding methods found locally were included in the allowable harvest. No significant multiple use restrictions were placed on these stands. The manageability and economics of harvesting these stands were considered favorable.

The woodland allowable harvest was based on harvesting nonsawtimber species only on suitable woodland. The woodland type consists of pinyon pine, juniper, aspen, and subalpine fir. The harvest level has increased from the Preferred Alternative because of the addition of Aspen and subalpine fir to the woodland forest base. Suitable woodland on slopes over 40 percent was removed from the allowable harvest due to topographic constraints as well as various multiple use restrictions.

Support

Cadastral survey and engineering support would be needed to help design and lay out timber sales and access roads. Fire management support would be needed for management of natural fire in meeting forest management resource objectives. Acquisition of legal access to public land would be needed to open areas to forest land management (see Transportation Map 3-16).

Implementation

Land use allocations proposed for forest management would become effective upon approval of the Proposed Plan. However, prior to implementing land management practices, activity plans would be prepared. Activity plans, termed forest or woodland management plans, have been previously prepared for Black Mountain, King Mountain, and Seven Hermits Forest Management Units. These plans, if necessary, would be revised to reflect the actions proposed in the plan. Site-specific activity plans would be prepared for the two remaining forest management units, Naval Oil Shale Reserve and Castle Peak. Woodland management plans would be written for extensive tracts of pinyon-juniper, aspen, and subalpine fir and the experimental project on the Naval Oil Shale Reserve. Environmental assessments would be prepared on all activity plans.

These activity plans would define the resources on the unit, state specific management objectives, specify planned actions, coordinate various resource values, and identify harvest levels, cutting cycles, and silvicultural practices for the commercial forest or woodland resource.

Sawtimber and fuelwood sales, timber stand improvement, reforestation, and road construction are examples of specific actions proposed in activity plans. Manuals and policy would offer specific guidance for implementing these actions. Environmental assessments and forest management plans would further identify project implementation and mitigation measures. Periodic inspections of these projects would ensure proper implementation.

Periodic forest inventories would be conducted in an effort to monitor the forest and woodland resources. Inventory data would be incorporated into activity plans and would assist in defining the allowable harvest base.

Commercial forest and woodland products would be offered for sale. Competitive bidding would be the common method for selling commercial sawtimber and fuelwood. Fuelwood, posts, poles, wild-

ings, and Christmas tree permits would also be sold to the general public.

Consistency

Harvesting forest products is consistent with other agencies, particularly the U. S. Forest Service. The demand for sawtimber products is presently low. Demand for fuelwood, particularly pinyon-juniper, is increasing annually. Providing forest products on a sustained-yield basis is also consistent with current national policies and objectives.

Effects

Based on current and projected market demands, the proposed allowable harvest of commercial forest land would provide sufficient volumes of sawtimber to satisfy the local timber industry and provide another option for timber purchases. The allowable harvest for woodland would supply most fuelwood demands. Through the application of forest management practices, the health and growth of stands would be enhanced, thereby increasing stand productivity and yields.

Recreation Resource Management

Objective

To provide recreational opportunities while reducing the impacts of recreational use on fragile and unique resource values and provide for visitor safety.

Proposed Management Actions

Recreation opportunity spectrum (ROS) management classes would be adopted as shown on Map 3-9. The objective of the ROS is to provide users with opportunities for a variety of recreational activities (hunting, fishing) in a variety of settings (wilderness, campground) for a desired experience (primitive, urban). For example, fishing a lake in a wilderness is a much different experience than fishing a lake near a city. Appendix E (DEIS) explains the ROS system.

The ROS system describes six classes ranging from urban to primitive. The management objectives for each class would be used to determine whether or not proposed management actions were consistent with the class and to identify possible mitigation measures. Each class provides objectives that guide the type of management actions that could be allowed within a class. Each class also indicates the type of recreational setting one could expect to find in the area.

Table 3-10 shows the acreage within each ROS class. The ROS changes are proposed to be consistent with other management actions such as timber harvesting and vegetation manipulations, which would alter the settings.

Table 3-10. Summary of Recreation Opportunity Spectrum (ROS) Classes

ROS Class	Acres	Percent of Total	
Primitive	722	0.1	
Semi-primitive non-motorized	17,768	3.2	←
Semi-primitive motorized	276,713	48.9	←
Roaded natural	237,147	41.9	←
Semi-urban	33,045	5.8	
Urban	647	0.1	

Existing recreational facilities would be maintained. Map 3-10 shows the locations of existing and proposed recreational facilities. Table 3-11 lists existing and proposed facilities and designations.

Table 3-11. Proposed Designations and Recreational Facilities

	Designation, Facility, or Service	Existing	Proposed
→	Number of developed sites (campgrounds, overlooks, highway rest stops)	4	5
→	Number of undeveloped recreation sites	1	.....
	Number of developed river access sites	3	6
	Number of undeveloped river access sites	1	.....
	Number of trails	2	5
	Number of trailheads	0	6
	Number of primitive recreation sites	0	7
	Number of snowmobile parking areas	0	4
	Acres identified as recreation management areas	0	16,140
	(Bull Gulch)	0	(10,214)
	(Hack Lake)	0	(3,456)
	(Deep Creek)	0	(2,470)
	Thompson Creek Natural Environment Area (acres)	4,286	4,286

Table 3-11. Proposed Designations and Recreational Facilities—Continued

Designation, Facility, or Service	Existing	Proposed
Permit program for commercial and competitive floatboating use	yes	yes
Upper Colorado River special recreation management area	yes	yes
Acquisition of private land	no	[1]yes
Number of off-road vehicle use areas	0	[2]1
Number of interpretive overlooks	0	1

[1]Approximate location: Twin Bridges.
[2]Acreage not yet determined.

In addition to acreage presently closed to mineral development, 50 acres in the Fryingpan recreation sites would be closed to mineral sales; 2,470 acres in Deep Creek would be closed to oil and gas surface facilities, mineral sales, and mineral location; 3,456 acres in Hack Lake would be closed to oil and gas surface facilities; and 9,778 acres in Bull Gulch would be closed to mineral leasing (Map 3-10).

Bull Gulch, Hack Lake, the upper Colorado River, and Deep Creek would be identified as recreation management areas.

Legal access would be acquired to most large public land parcels to open public land to public use.

Rationale

Recreation is an important social and economic issue in this resource area. The Proposed Plan was chosen to meet the existing and future recreational demands and prevent resource degradation in high use areas. Deep Creek, Hack Lake, Bull Gulch, and Thompson Creek were identified for special management and protection because they contain unique or unusual, natural, scenic, or recreational values.

Support

Fire support would be needed for managing natural fire in meeting recreation resource objectives and for protecting unique and fragile recreation resources. Cadastral and engineering support would be needed to lay out and design access roads. Acquisition of legal access to public land would be needed to open areas to recreation management (see Transportation Map 3-16).

Cooperative agreements would be developed with the Colorado Division of Parks and Recreation for the development and maintenance of proposed trails and snowmobile parking areas. Engineering would be required for design and construction of recreational facilities. Cadastral survey and appraisal would be necessary for acquisition of private land.

A cooperative agreement would be developed with the owner of the property near Sheep Gulch to use the area as a river access site.

Implementation

ROS classes would become effective upon approval of the plan. Recreation management plans would be prepared for special recreation management areas and designated areas; existing management plans would be revised, if necessary to be consistent with the Proposed Plan. Site plans would be prepared for new facility developments. These plans would include detailed engineering, site location, cost-benefit analysis, and detailed environmental analyses of the proposal.

The condition of recreation sites, including resource damage, would be inspected periodically. Visitor use would be sampled using various methods including selected road and trail traffic counters and visitor registers. Recreation management plans would be reviewed periodically to determine if revisions are necessary because of changing conditions.

Consistency

The Proposed Plan is consistent with the *State Comprehensive Outdoor Recreation Plan* which states the BLM should continue producing dispersed recreation and move toward more direct management of outdoor recreation opportunities. The state plan also recognizes the upper Colorado River as a significant recreation resource. Overall, recreation management on public land adjacent to national forest land would be consistent with U. S. Forest Service management objectives. Specific management of recreation resources on public land in the resource area is not addressed in the plans and policies of local governments; however, the Proposed Plan appears to be consistent with gen-

eral language in the plans that discuss the importance of recreation.

Effects

Existing settings would be maintained in most areas. Maintenance would prevent deterioration of existing and proposed recreational facilities. Both existing and future recreation demands would be met, and fragile resource values would be protected.

Cultural Resource Management

Objective

To protect the cultural and historical values in the resource area from accidental or intentional destruction and give special protection to high value cultural resource sites.

Proposed Management Actions

Approximately 4,178 acres known as the Blue Hill Archaeological District would be nominated for designation on the *National Register of Historic Places* and would be designated as an area of critical environmental concern (ACEC). Selected sites identified as having high value for management would be actively managed as outlined in the Glenwood Springs Cultural Resource Management Guide. The remaining sites would be managed as prescribed by law and policy to protect cultural resource values.

Project areas would be inventoried for cultural resources prior to project approval. Measures would be taken to protect any cultural resources found.

Rationale

Many high value cultural sites are being lost through natural and man-caused actions. The Proposed Plan was chosen to identify these high value sites and areas and recommend special management to protect them. The Blue Hill Archaeological District was identified for special management for these reasons.

Support

Fire management would be needed for management of natural fire in meeting cultural resource objectives.

Implementation

Cultural resource clearances would be required for each project prior to construction or development. High value sites would be managed as outlined in the cultural resource management guide.

Consistency

Local plans and policies do not specifically address cultural resources. However, the proposed actions are consistent with the State Historic Preservation Officer's plan for management of cultural resources. All remaining sites would be protected from destruction through actions required by law and BLM policy.

Effects

New information about past civilizations would be obtained from managing the Blue Hill Archaeological District and other high value sites. Protection from natural or man-caused deterioration would be provided to these sites through special protective measures.

Paleontological Resource Management

Objective

To manage the paleontological resource program as required by law and policy to protect significant paleontological values.

Proposed Management Actions

Projects would be inventoried for paleontological resources in areas of high paleontological values prior to project approval. Measures would be taken to protect any significant paleontological resources found.

Rationale

Inventory of paleontological resources in high value paleontological areas prior to surface-disturbing activities is a requirement as outlined by BLM policy.

Support

No support would be required.

Implementation

In areas requiring inventory, a survey would be conducted prior to approval of projects involving surface disturbance.

Consistency

This management approach is consistent with existing law and policy. Local land use plans or policies do not specifically address paleontological resources.

Effects

Inventory of project sites prior to project approval would continue to protect paleontological resources from destruction.

Wilderness Management

A total of 9,778 acres within the Bull Gulch Wilderness Study Area (WSA), recommended as nonsuitable for wilderness under the Preferred Alternative (DEIS), now have been recommended as preliminarily suitable under the Proposed Plan. In addition, the boundary of the Bull Gulch WSA has been modified to exclude 636 acres of public land whose minerals are owned by the State of Colorado. The boundary modification was made as a result of a Secretarial Decision published in the March 17, 1983, *Federal Register*.

The 636 acres excluded from the Bull Gulch WSA could be recommended as a suitable addition to the Bull Gulch Wilderness (should it be designated by Congress) if the state-owned minerals could be exchanged. The State of Colorado has indicated a willingness to make such exchanges in BLM wilderness areas (State of Colorado Board of Land Commissioners 1983).

Objective

To determine the suitability or nonsuitability of WSAs for wilderness designation.

Proposed Management Actions

Map 3-11 shows the identified WSAs and the suitability recommendations. Table 3-12 shows the acreage in each WSA that would be recommended as preliminarily suitable and nonsuitable for wilderness designation.

Table 3-12. Summary of Wilderness Proposed Management Actions

(in acres)

Wilderness Study Area[1]	Suitable	Nonsuitable
Eagle Mountain[2]	330	0
Hack Lake[3]	10	3,350
Bull Gulch[4]	9,778	4,586
Castle Peak	0	11,940
Total	10,118	19,876

[1]Includes areas considered for wilderness designation under Sections 202 and 603 of the *Federal Land Policy and Management Act of 1976.*

[2]Would be added to the existing Maroon Bells-Snowmass Wilderness administered by the U. S. Forest Service.

[3]Would be added to the existing Flat Tops Wilderness administered by the U. S. Forest Service.

[4]The Bull Gulch boundary has been modified to exclude 636 acres of state-owned minerals.

The Bull Gulch and Castle Peak WSAs are being considered for wilderness designation under Section 603 of the *Federal Land Policy and Management Act of 1976* (FLPMA). The BLM is required to recommend WSAs considered for wilderness designation under Section 603 of FLPMA as suitable or nonsuitable for designation as wilderness. These recommendations are preliminary and, therefore, could change during administrative review. The recommendations would become final only if adopted by the Secretary of the Interior and the President. Final wilderness designation decisions are made by Congress.

The Eagle Mountain and Hack Lake WSAs are being considered for wilderness under Section 202 of FLPMA. Suitable recommendations are also preliminary, could change during administrative review, and would become final only if adopted by the Secretary of the Interior and the President. However, nonsuitable recommendations would become final upon approval of the plan. Final wilderness designation decisions are made by Congress.

Administration of the Eagle Mountain WSA and the preliminarily suitable portion of Hack Lake WSA would be recommended for transfer to the U. S. Forest Service upon designation as wilderness.

Rationale

Castle Peak. The entire WSA was recommended as nonsuitable for wilderness designation because it would add little to the diversity of the National Wilderness Preservation System. It is very similar ecologically to existing wildernesses both locally and state-wide. Under a nonwilderness situation, Castle Peak would be managed for a variety of resources in addition to providing for primitive and

natural recreational opportunities, non-motorized and motorized recreation, management of wildlife habitat, livestock grazing, and timber management.

Bull Gulch. Approximately 9,778 acres were recommended as suitable to preserve wilderness values and supplemental scenic, wildlife, and ecological values and to add local diversity to the National Wilderness Preservation System. The remainder of the WSA was recommended as nonsuitable because wilderness management would conflict with other resource values, primarily fuelwood, wildlife, and livestock resources.

Hack Lake. Because of its small size, the Hack Lake WSA would be manageable as wilderness only as an addition to the existing Flat Tops Wilderness administered by the U. S. Forest Service. Approximately 10 acres of the WSA, located above the rim of the Flat Tops, is a logical extension of the Flat Tops Wilderness and was recommended as suitable. The remainder of the WSA, located below the rim, was recommended nonsuitable because it is physically isolated from the existing wilderness. Management as wilderness could conflict with future management on adjacent national forest land and would create an island of nonwilderness national forest land between the WSA and the existing wilderness. Refer to Map 3-11 for a visual display of the area.

Eagle Mountain. Because of its small size, the Eagle Mountain WSA would be manageable as wilderness only as an addition to the Maroon-Bells Snowmass Wilderness administered by the U. S. Forest Service. All of Eagle Mountain was recommended as suitable because it has essentially no resource conflicts and is consistent with U. S. Forest Service management of the Maroon Bells-Snowmass Wilderness.

Support

Mineral surveys by the U. S. Geological Survey and the U. S. Bureau of Mines would be required for WSAs recommended as preliminarily suitable for wilderness designation as requested by the BLM Director. Fire management support would be needed for management of natural fire in meeting the resource objective and for the protection of unique and fragile resources.

Implementation

The nonsuitable portion of the Hack Lake WSA would be released from further wilderness consideration and managed for other resource values upon approval of the Proposed Plan. The suitable portion of the Hack Lake WSA and the entire Eagle Mountain, Bull Gulch, and Castle Peak WSAs would continue to be included in the wilderness review process.

A wilderness study report indentifying the preliminary recommendations for each WSA would be prepared and submitted to Congress. Appendix D (DEIS) explains the wilderness reporting process. A final environmental impact statement on the wilderness portion of the plan would be prepared and would accompany the wilderness study report. Following Congressional action, a wilderness plan would be prepared for any area designated as wilderness by Congress. Those areas not designated would be managed for other values as identified under the Proposed Plan.

Until Congress makes its decision on whether or not to designate an area as wilderness, the BLM is required to manage WSAs studied under Section 603 of FLPMA "so as not to impair the suitability of such areas for preservation as wilderness." The policy and guidance for this management is contained in the BLM's *Interim Management Policy and Guidelines for Lands Under Wilderness Review* (IMP). Currrent BLM policy is to similarly protect WSAs studied under Section 202 of FLPMA that are being considered for wilderness designation.

Upon approval of the Proposed Plan, proposed projects in WSAs would be evaluated to ensure compliance with IMP. WSAs would be patrolled periodically to detect and prevent unauthorized actions.

Consistency

The White River National Forest and Eagle County support suitable recommendations for the Eagle Mountain WSA and for the 10 acres of the Hack Lake WSA above the rim of the Flat Tops. The state of Colorado supports suitable recommendations for the Bull Gulch and Hack Lake WSAs. Pitkin County supports suitable recommendations for the Eagle Mountain, Bull Gulch, and Castle Peak WSAs. Garfield County supports suitable recommendations for the Hack Lake and Bull Gulch WSAs.

Effects

Wilderness values would be preserved on the acres recommended as suitable for wilderness designation.

Opportunities to develop and use other resources such as minerals and forest products would be available on the acreage recommended nonsuitable

and lost on the acreage recommended as suitable for wilderness designation.

Areas of Critical Environmental Concern (ACECs)

Objective

To designate areas where special management is needed to protect important geologic, botanic, historic, cultural, and scenic values; fish and wildlife resources; other natural systems (rare or exemplary ecosystems); or human life and property from natural hazards.

Proposed Management Actions

Map 3-12 shows areas that would be designated as ACECs. Table 3-13 lists each area and gives the reason and management prescription for each designation.

Table 3-13. Summary of Areas of Critical Environmental Concern (ACEC) Designations

Area	Size (acres)	Reason	Management Prescription
Blue Hill Archaeological District	4,718	Archaeological values	●Designate as sensitive for utility and communication facilities. ●Identify as an erosion hazard area. ●Nominate to the National Register of Historic Places. ●Limit off-road vehicle use to existing roads and trails. ●Designate as fire exclusion zone.
Glenwood Springs Debris Flow Hazard Zone	6,675	Mud and debris flow	●Coordinate management with the Glenwood Springs Debris Flow Hazard Study. ●Designate as sensitive for utility and communication facilities. ●Limit off-road vehicle use to designated roads and trails. ●Prohibit oil and gas surface facilities. ●Designate as a fire exclusion zone. ●Limit livestock use to light grazing. ●Prohibit vegetation manipulations for livestock, wildlife, and timber management.
Bull Gulch	6,714	Scenic values	●Designate as unsuitable for utility and communication facilities. ●Close the area to off-road vehicle use. → ●Prohibit oil and gas leasing, mineral sales, and mineral location. ●Designate as fire management zone-ecosystem management area. ●Identify as a recreation management area. ●Identify as a potential peregrine falcon introduction site. ●Prohibit vegetation manipulations for livestock, wildlife, and timber management. → ●Identify 6,077 acres as suitable for wilderness designation. If designated, manage the area under the Wilderness Act. If not designated, close to oil and gas leasing. → ●Manage under visual resource management Class I objectives.
Deep Creek	2,470	Scenic values	●Designate as unsuitable for utility and communication facilities. → ●Manage under visual resource management Class I objectives. ●Identify as a recreation management area. ●Identify as a potential peregrine falcon introduction site. ●Prohibit vegetation manipulations for livestock, wildlife, and timber management.
→ Lower Colorado River Cooperative Management Area	[1]	Riparian and wildlife values	●Protect important wildlife and riparian values. ●Identify for cooperative management with Colorado Division of Wildlife. ●Designate as sensitive for utility and communication facilities.

[1]This area is presently under survey to determine the public land acreage.

Support

Engineering support would be needed to implement specific recommendations. Fire support would be needed to protect unique and fragile resource values. Colorado Division of Wildlife support would be needed to help fund, implement, and manage specific ACECs.

Rationale

ACEC designations were proposed to protect scenic values, critical watersheds, wildlife, and cultural resource values.

Implementation

Approval of the plan would constitute formal designation of all proposed ACECs. A management plan would be prepared for those ACECs that require more detailed planning to implement the management prescriptions identified in the Proposed Plan.

All ACECs would be monitored periodically to determine whether management actions were effective in protecting identified resource values. Adjustments to the management of these areas would be made as needed.

Consistency

Refer to the Cultural Resource, Visual Resource, and Terrestrial Habitat Management sections for discussions on consistency.

Effects

By designating six areas as ACECs, identified fragile resources would be protected from resource degradation. These benefits would be long term and significant.

Visual Resource Management

Objectives

To maintain existing visual quality throughout the resource area and protect unique and fragile resource values.

Proposed Management Actions

Visual resource management (VRM) classes would be designated as shown on Map 3-13. Visual resources on public land would be managed by the objectives for each class. (VRM classes are defined in the Glossary.) Table 3-14 shows the approximate acreage within each class.

Table 3-14. Summary of Visual Resource Management Classes

Class	Acres	Percent of Resource Area
Class I	13,470	2
Class II	225,106	40
Class III	149,112	26
Class IV	176,690	31
Class V	1,664	1

VRM classes range from Class I, which would provide full protection for the visual resource, to Class V, which includes areas so badly impacted and disturbed that the sites require rehabilitation. VRM classes are objectives that outline the amount of disturbance an area can tolerate before it no longer meets the objectives of that class. The objectives for each class would be used to determine whether or not proposed management actions are consistent with the class and to identify possible mitigation measures.

Deep Creek and Bull Gulch would be designated as areas of critical environmental concern and managed under Class I objectives. The proposed Thompson Creek Natural Environment Area would also be managed under Class I objectives.

Some existing Class II areas would be changed to Class III to allow resource management actions such as timber harvesting and vegetation manipulation. Some existing Class III areas would be changed to Class IV to be consistent with developments on adjacent private lands.

No specific visual modifications would be identified for rehabilitation.

Rationale

Visual quality is of concern to most residents in the resource area. The Proposed Plan was chosen to provide special emphasis to the scenic quality along the Interstate 70 and Highway 82 travel corridors. Three additional areas—Deep Creek, Thompson Creek, and Bull Gulch—were proposed for spe-

cial management to protect their outstanding scenic qualities.

Support

Fire management support would be needed for management of natural fire in meeting the resource objective and for the protection of unique and fragile resources.

Implementation

All VRM classes would become effective upon approval of the Proposed Plan. Proposed projects would be evaluated to determine whether they were compatible with the designated VRM class. Measures would be taken to mitigate adverse visual impacts. Incompatible projects whose impacts could not be mitigated would be rejected.

Approved projects would be monitored to ensure compliance with mitigation measures, including rehabilitation.

Consistency

The proposed management actions are consistent with local land use plans and policies that place value on the preservation of open space and scenic quality.

Effects

Visual quality would be maintained through the establishment of VRM classes. Unique and fragile resource values would be maintained in Bull Gulch, Thompson Creek, and Deep Creek through special management proposals.

Land Tenure Adjustments

Objective

To increase the overall efficiency and effectiveness of public land management by identifying public land for retention and disposal.

Proposed Management Actions

Two land tenure management zones would be identified: retention and disposal (Map 3-14). The retention zones would include public land where it would be in the best interest of the public to retain and manage the land. Within the retention zones, public land suitable for cooperative management would be identified. Cooperative management areas are parcels of public land that could be managed more efficiently in conjunction with other government agencies. These areas could be managed through cooperative agreements, memorandums of understanding, or withdrawals. They also could be exchanged with other government agencies if exchange would best meet management objectives and public needs.

The disposal zones would include public land where it would be in the best interest of the public to dispose of land to (1) increase management efficiency; (2) make land available for more intensive use; and (3) serve the national interest. Public land parcels in disposal zones that meet the considerations for disposal (Appendix G, Disposal Zone Considerations) would be identified for public sale. Table 3-15 shows the acres identified under each zone.

Table 3-15. Summary of Land Tenure Adjustments

Zone	Acres	*Percent of Resource Area*
Retention Zone	550,542	97.3
(Public Land Management)	(487,762)	(86.2)
(Cooperative Management)	(62,780)	(11.1)
Disposal Zone	15,500	2.7

Note: A total of 7,444 acres of crucial big game winter range, identified under the Preferred Alternative (DEIS) for disposal, has been placed in the retention zone under the Proposed Plan. However, this public land would still be considered suitable for exchange with or sale to the Colorado Division of Wildlife.

Appendix G shows the considerations used to identify retention and disposal zones.

Rationale

The primary purpose of the Land Tenure Adjustment Program is to provide for better management of the resource area. This would be accomplished by disposing of small and isolated tracts of land, land that is difficult and uneconomic to manage, and land better suited for more intensive use in private ownership. Disposal and retention zones were designated in the Proposed Plan to accomplish this. If important resource values were present, an area was usually included in a retention zone (either under multiple use or cooperative management). Public comments on the DEIS emphasized the importance of retaining public land with important resource values, particularly crucial big game winter range. Therefore, larger parcels of crucial winter range identified for disposal in the Preferred

Alternative (DEIS) were identified in retention zones in the Proposed Plan. In some instances, tracts with resource values were identified for disposal because their proximity to existing industrial, commercial, or residential development was an indicator of their potential for more intensive use. This approach is consistent with current national policies regarding the identification of land for disposal and efficient management of public land.

Support

Support would be needed for conducting cadastral surveys and appraisal reports to locate and estimate the value of public land identified for disposal.

Implementation

Upon plan approval, recommendations for land tenure management zones would be adopted. The considerations for zone delineation and management are found in Appendix G.

Prior to conveyance of public land to private ownership, a disposal plan would be written. The plan would determine the location, amount, timing and conditions of sale for each parcel. The disposal plan would be designed to complete the conveyances of disposal parcels within 5 years following approval of the Proposed Plan. The disposal plan would aggregate disposal parcels into geographic sale areas. The disposal plan would analyze, by geographic area, fair market values, market conditions, and site-specific impacts that would result from the conveyance of the parcels. This analysis would be used to determine the implementation schedule for conveyances.

Consistency

The concept of identifying areas for retention, disposal, and cooperative management is supported by each of the affected counties. The counties have voiced concerns over the manner in which land would be disposed and have stressed the importance of close coordination and notification prior to sale. Many of the counties' specific concerns have been resolved or partially resolved through the approach taken in the Proposed Plan.

The state of Colorado supports the concept of identifying land suitable for sale and land suitable for exchange. This approach was not used in the Proposed Plan.

Effects

Disposal of 15,500 acres of public land would have adverse impacts on some local big game populations through disposal of 7,386 acres of crucial winter range. Forest products and livestock forage would also be lost but would be insignificant. Management efficiency would be substantially improved.

Off-Road Vehicle Management

Objective

To protect fragile and unique resource values from damage by off-road vehicle (ORV) use and provide ORV use opportunities where appropriate.

Proposed Management Actions

Fragile and unique resources would be protected from damage by motorized vehicle use. Some areas would be designated closed to all motorized vehicles while others would be designated limited to certain types of motorized vehicle use or to certain seasons of use. An intensive use area would be identified at a later date in the Parachute/Battlement Mesa area if a suitable location could be identified.

Map 3-15 shows the locations of the ORV designations. Table 3-16 shows the acreage within each designation. The designations would be in effect year-round except for the seasonal limitations shown on Map 3-15.

Table 3-16. Summary of Off-Road Vehicle Designations

Designation	Acres	Percent of Resource Area
Closed	20,426	4
Limited[1]	152,001	27
Open	393,615	69
Intensive Use	[2]unknown	[2]unknown

Note: Closures and limitations would not apply to federal, state, and local law enforcement officers; members of organized rescue or fire-fighting forces in the performance of official duties, or persons with a permit specifically authorizing the otherwise prohibited use.

[1]Includes existing roads and trails, designated roads and trails, and seasonal limitations.

[2]Location not known at this time.

Rationale

Areas were recommended as open to ORV use when no special restrictions were needed to protect resource values or where user conflicts or public safety issues did not warrant limiting or prohibiting ORV use. Areas that possessed unique or fragile resource values or where unrestricted ORV use would be inconsistent with management objectives were recommended to be closed or limited to ORV use.

Support

No support would be needed.

Implementation

All ORV designations would become effective following approval of the Proposed Plan. An implementation plan would be prepared to define the specific actions (for example, signs, barriers, and identification of roads and trails on which use is allowed in areas limited to designated roads and trails) needed to implement the ORV decisions. Notices describing the ORV designations would be published in the *Federal Register* and in local newspapers. Maps showing the designations would be printed and made available to the public.

Closed and limited areas would be monitored for compliance with designations. Open and limited areas would be monitored to ensure no unacceptable resource damage occurred. Additional restrictions would be placed on ORV use that causes unacceptable damage.

Consistency

The Proposed Plan would be consistent with the 1981 Travel Map for the White River National Forest except in the Deep Creek and Hack Lake areas where public land would be closed and adjacent national forest land is open or restricted.

Effects

In areas closed or limited to ORV use, fragile and unique resource values would be protected. Because closures would be less than 4 percent of the total public land in the resource area and ORV use would not be completely eliminated in the limited areas, the loss of ORV use opportunities would be insignificant. Designating an area for intensive ORV use would provide recreational ORV users an area in which to recreate.

Transportation Management

Objective

To provide access to public land in support of the management objectives of other resource programs.

Proposed Management Actions

Additional miles of road and trail would be available for public access. Easements for public access also would be identified. These new access recommendations would support other resource programs such as recreation, wildlife, and forest management. In some cases, this new public access would involve new road or trail construction, but generally existing roads and trails would be used.

Locations of existing and proposed roads and trails and areas identified for easement acquisition are shown on Map 3-16. A total of 258 miles of road, 48 miles of trail, and 48 areas for easement acquisition are proposed.

Rationale

Actions were proposed to support the proposals and objectives of other resource programs.

Support

Cadastral survey for boundary determination and corner identification would be necessary to accurately plot easement locations.

Implementation

Following approval of the Proposed Plan, a transportation map would be prepared showing all existing public roads, BLM roads, and private roads that provide access to public land.

Prior to implementation, a route analysis would be conducted on each access proposal to identify feasible routes. The route analysis would analyze environmental impacts, user costs, safety, construction and maintenance costs, acquisition costs (if applicable), suitability of soil and geology for construction, and any other factors relevant to choosing the best location. The District Manager would select the final route using this analysis.

New road construction and road improvements would comply with the road standards and designs outlined in BLM policy Manual 9113. These stand-

ards would provide for proper design and construction so that roads would be safe, adequate, and would prevent or reduce undue damage to the environment.

All right-of-way applications made by outside parties for roads or trails would be reviewed and compared with the transportation plan. Applications compatible with identified access needs would require reciprocal easements across the applicant's land to provide access to public land.

As roads and trails were constructed, maintained, or improved, all work would be monitored by BLM personnel to ensure road standards were followed and unnecessary impacts to the environment were avoided.

The transportation system would be reviewed periodically, and any unneeded roads or trails would be closed and rehabilitated, if necessary.

Consistency

Proposed roads and trails are consistent with the transportation plans of Eagle, Garfield, and Pitkin Counties and the White River National Forest.

Effects

A significant amount of new legal access would be provided to nearly all large blocks of public land. These would provide significant beneficial impacts to resource programs relying on legal access to accomplish management objectives.

Utility and Communication Facility Management

Objective

To respond, in a timely manner, to requests for utility and communication facility authorizations on public land while considering environmental, social, economic, and interagency concerns.

Proposed Management Actions

Public land would be designated suitable for consideration, sensitive, and unsuitable for utility and communication facility development as shown on Map 3-17.

Table 3-17 lists the acres in each zone that would be considered suitable for consideration, sensitive, or unsuitable for the location of electric transmission and distribution lines and related facilities, pipelines and related facilities, and communication facilities. Table 3-18 shows the resource values that contributed to designation of these zones.

Table 3-17. Summary of Utility and Communication Facility Designations

Designation	Acres	Percent of Resource Area
Suitable	443,993	78
Sensitive[1]	101,293	18
Unsuitable	20,756	4

[1]Does not include acreage of visual resource management Class II areas shown on Visual Resource Management Map 3-13 or public land along the Colorado River where location of public land is in question.

Rationale

The primary purpose of the Utilities and Communication Facilities Management section was to provide a framework for responding to requests for utility and communication site facility authorizations on public land. The approach taken under the Proposed Plan was to identify areas where resources are present that are sensitive to or incompatible with construction of utility and communication facilities. Sensitive zones and unsuitable zones were delineated to identify areas with fragile, unique, or restrictive resource values (see Table 3-18). A bighorn sheep study area and areas of known occurrence of sensitive plant species were added to the sensitive category under the Proposed Plan for these reasons. Recreation sites, peregrine falcon introduction areas, and bald eagle/blue heron high use areas were changed from unsuitable under the Preferred Alternative (DEIS) to sensitive under the Proposed Plan. It was felt that this designation would adequately protect these resource values while allowing utilities in these areas when impacts can be successfully mitigated.

Support

Engineering support would be needed for design analysis of proposals. Appraisal support would be needed for valuation of rights-of-way.

Implementation

Upon approval of the Proposed Plan, unsuitable, sensitive, and suitable zones would become effective. The resource management plan would be provided to applicants for land use authorizations for

Table 3-18. Resources Contributing to Identification of Management Zones for Utility and Communication Facilities

Symbol on Map	Value Present	Designation
Wildlife		
BE/BH	Bald eagle/blue heron high-use areas, (nest, perch, and roost trees)	Sensitive
SG	Sage grouse strutting grounds	Sensitive
SG	Sage grouse winter-use and brood areas	Sensitive
EC	Elk calving areas	Sensitive
P	Peregrine falcon introduction areas (proposed)	Sensitive
R	Raptor concentration areas	Sensitive
AH	Aquatic habitat	Sensitive
	Riparian areas (not shown on map)	Sensitive
BS	Bighorn sheep study area (proposed)	Sensitive
RO	River otter introduction area (proposed)	Sensitive
Recreation		
SPNM	Primitive and semi-primitive non-motorized areas	Sensitive
RS	Recreation sites (existing and proposed)	Sensitive
SRMA	Special recreation management areas	Sensitive
NEA	Thompson Creek Natural Environmental Area (proposed)	Unsuitable
PNV	Primitive and natural values	Unsuitable
Wilderness		
WSA	Wilderness study areas identified preliminarily suitable for wilderness	Unsuitable
WSA	Wilderness study areas recommended nonsuitable for wilderness will be managed under BLM's *Interim Management Policy and Guidelines for Lands Under Wilderness Review* (December 1979)	Sensitive
Hydrology		
GDF	Glenwood Springs debris flow hazard zone	Sensitive
MW	Municipal watersheds	Sensitive
	Flood plains (not shown on map)	Sensitive
	Wetlands (not shown on map)	Sensitive
Visual		
	Sensitive viewsheds, visual resource management Class I areas (consult the Visual Resource Management section and Map 3-13)	Unsuitable
	Sensitive viewsheds, visual resource management Class II areas (consult the Visual Resource Management section and Map 3-13)	Sensitive
Cultural Values		
BHAD	Blue Hill Archaeological District	Sensitive
Vegetation		
SP	Sensitive plant species, areas of known occurrence	Sensitive

their use as a planning tool in designing their proposed facilities.

The resource management plan would be used as a primary reference in determining general locations for major utility systems. Applications for land use authorizations would be compared with the zones and then processed on a case-by-case basis as outlined in BLM regulations.

Unsuitable Zones. Applications within unsuitable zones would be rejected, except where valid existing rights require granting of authorization.

Sensitive Zones. Applications within sensitive zones would be considered only if mitigation measures could reduce the potential impacts of the proposal on the identified sensitive resource. All approved authorizations would include stipulations to mitigate impacts to sensitive resources and site-specific impacts associated with the proposed facility. If impacts could not be mitigated, applications would be approved in another suitable location or rejected. In most cases, applicants would be encouraged to seek alternate locations where available.

Suitable Zones. Applications for proposals within suitable for consideration zones would be processed on a case-by-case basis as outlined in BLM regulations. All approved authorizations would include stipulations to mitigate site-specific impacts associated with the proposed facility. If site-specific impacts could not be mitigated, applications would be approved in another suitable location or rejected.

In all zones, locations of proposals adjacent to compatible existing facilities or upgrading of existing facilities would be encouraged.

Consistency

The concept of identifying sensitive and unsuitable zones has received support from each of the affected counties.

Effects

Identification of zones as unsuitable, sensitive, and suitable for consideration would help utility companies design proposals for land use authorizations. This practice would reduce processing costs and increase efficiency. Those resource values present in the unsuitable zones (Table 3-18) would be protected from adverse impacts associated with construction and operation of utility and communication facilities. Resource values in sensitive and suitable zones would be protected through appropriate mitigation measures.

Fire Management

Objective

To reduce losses, complement resource management objectives, and sustain the productivity of the biological systems through fire management.

Proposed Management Actions

Three zones would be designated within the resource area for management of wildfire—fire exclusion, fire management, and fire suppression.

In fire exclusion zones, immediate actions would be taken to suppress all wildfires to protect resource values. In addition, hazard reduction projects and prevention programs could be developed to reduce the fire risk.

In fire management zones, wildfire could be used as a management tool to maintain natural ecosystems or manipulate vegetation types. Burning would comply with BLM Manual Section 7723, *Air Quality Maintenance Requirements* (see Appendix B). Within this zone, detrimental and beneficial impacts of fire would be considered. Those anticipated impacts and the burning conditions would be used to determine suppression techniques used to control the fire.

In fire suppression zones, actions would be taken to contain wildfire. Should a fire escape suppression ability, it would be managed to minimize environmental damage and rehabilitation cost. Approximate locations of these zones are shown on Map 3-18. Table 3-19 shows the number of acres within each zone.

Table 3-19. Summary of Proposed Management Zones

Zone	Acres	Percent of Resource Area
Fire Exclusion Zone	25,280	4
Fire Management Zone	241,090	43
(Vegetation Manipulation Area)	(217,790)	.....
(Ecosystem Maintenance Area)	(23,300)	.....
Fire Suppression Zone	299,672	53

Rationale

Actions were proposed to support the proposals and objectives of other resource programs.

Support

Support would be needed from the U. S. Forest Service, Colorado State Forest Service, BLM's Western Slope Fire Operation's Office, and local fire districts for presuppression and suppression planning and equipment.

Implementation

Upon approval of the Proposed Plan, fire management plans would be written for the fire management zones. Specific boundaries of the zones and fire prescriptions would be identified to meet the objectives of the management zone and resource values within the zone.

Consistency

Proposed actions are consistent with U. S. Forest Service and BLM policies. They were discussed

with the Colorado State Forest Service and the fire chiefs from the fire protection districts within the resource area and were favorably received.

Effects

By specifying where fire is wanted and unwanted, time and money would not be spent fighting beneficial fires. Moreover, some resources would benefit from fire.

SUMMARY OF ACTIONS IN SPECIFIC GEOGRAPHIC AREAS

This section is included to give the reader a better understanding of the overall management proposed in a selected number of geographic areas located within the Glenwood Springs Resource Area. In most cases, these areas include fragile and unique resource values which require special management consideration. They are a focal point for management resulting in a large number of overlapping proposals.

Following is a summary by geographic area of the proposals recommended in the Proposed Plan. The locations of these areas are shown on Figure 3-1.

Lower Colorado River Cooperative Management Area

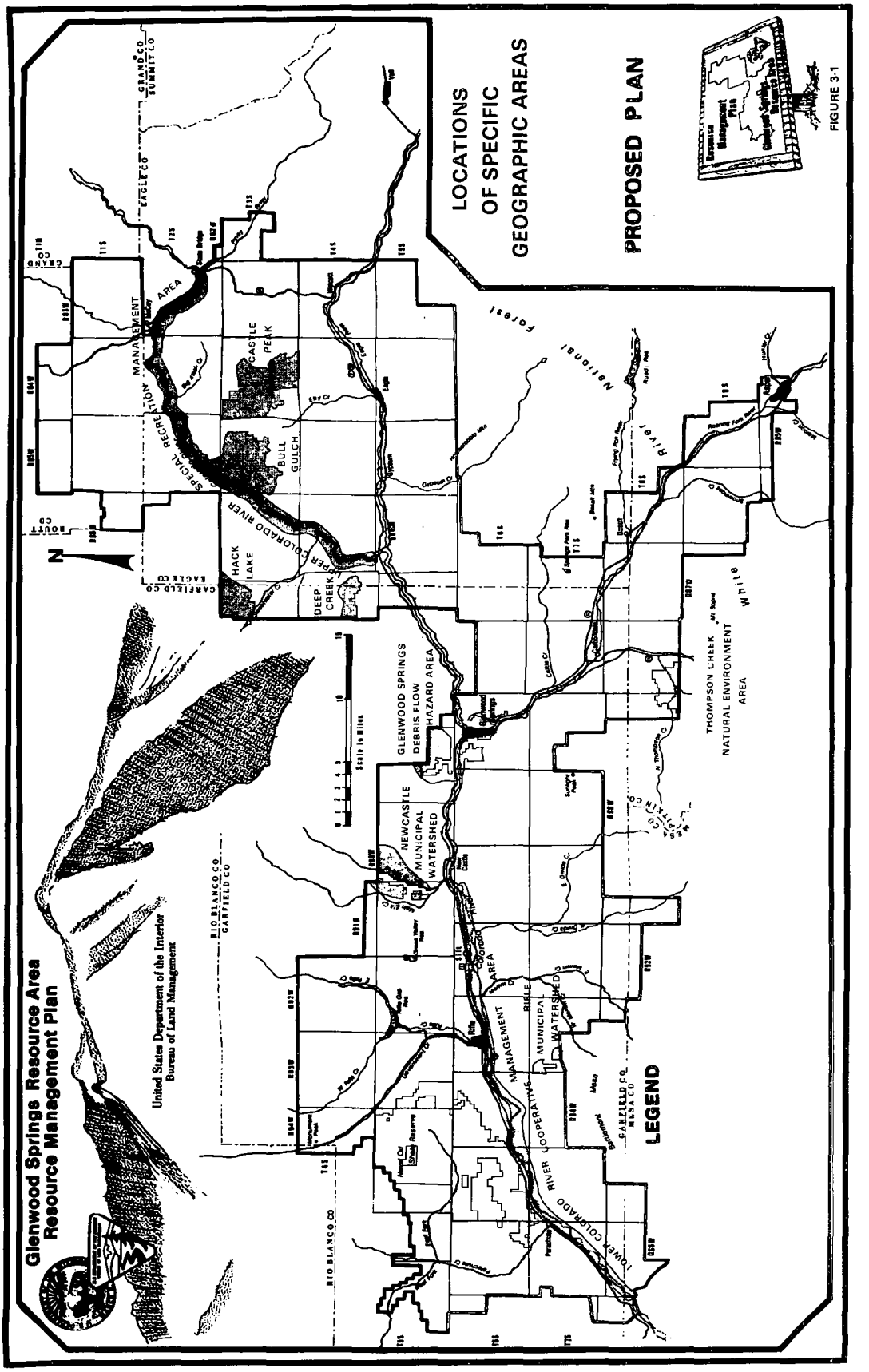
The lower Colorado River cooperative management area is an area of scattered public land along the Colorado River which includes high value wildlife habitat for bald eagles, great blue heron, Canada geese, and other species reliant on riparian habitats. The area is characterized by numerous man made intrusions mostly associated with sand and gravel developments and highway construction. Development pressures appear to be increasing in this area due to new highway construction, oil shale support facilities, and housing developments. The management emphasis in this area would be the protection of important wildlife and riparian habitat values.

Proposals

- Management emphasis would be given to the protection of important wildlife and riparian values on public land (see Chap. 3, Terrestrial Habitat Management).
- The area would be identified for cooperative management with the Colorado Division of Wildlife (see Chap. 3, Terrestrial Habitat Management).
- The area would be designated as sensitive for utility and communication facilities (see Chap. 3, Utility and Communication Facility Management). ←
- The area would be placed in a semi-urban recreation opportunity spectrum (ROS) class (see Appendix E, DEIS).
- The area would be managed consistent with the visual resource management (VRM) Class II (retention of the landscape character) and III (partial retention of the landscape character) objectives (see Chap. 3, Visual Resource Management).
- The area would be designated as an area of critical environmental concern (ACEC) for the protection of wildlife and riparian values (see Chap. 3, Areas of Critical Environmental Concern). ←
- The mining of gravel would be allowed on public land when the operation has no significant adverse impacts on riparian and wildlife values or when the residual impact is beneficial to aquatic or riparian values.

Glenwood Springs Debris Flow Hazard Zone

The debris flow hazard zone consists of the upper watershed areas, the steep mountain gulches, and the debris fans that ring the city of Glenwood Springs and the unincorporated area of West Glenwood Springs. Debris flows in this area usually occur from intense summer thunderstorms of short duration. Runoff concentrates in the upper watershed areas, passes over the cliffs and down the steep mountain gulches above the developed areas where it accumulates large quantities of debris (soil, rock, tree trunks, and other debris), and then flows out onto the debris fans upon which much development has occurred. The result is risk to life and damage to structures. Much of the public land lies within the upper watershed areas that are a source of a majority of the runoff but little of the debris. This land is used primarily for grazing and recreation; these uses are expected to continue into the future. It also contains crucial winter range for deer. The vegetation is characterized by pinyon-juniper, mountain brush, and grassland. The management emphasis would be directed toward the stabilization of the watersheds surrounding the city of Glenwood


Glenwood Springs Resource Area
Resource Management Plan
United States Department of the Interior
Bureau of Land Management
LOCATIONS
OF SPECIFIC
GEOGRAPHIC AREAS
PROPOSED PLAN
LEGEND
SPECIAL RECREATION MANAGEMENT AREA
CASTLE PEAK
BULL GULCH
HACK LAKE
DEEP CREEK
COLORADO RIVER
NEWCASTLE MUNICIPAL WATERSHED
GLENWOOD SPRINGS DEBRIS FLOW HAZARD AREA
THOMPSON CREEK NATURAL ENVIRONMENT AREA
RIFLE MUNICIPAL WATERSHED
RIFLE AREA MANAGEMENT
COOPERATIVE
TOWER
RIO BLANCO CO
GARFIELD CO
MESA CO
EAGLE CO
GRAND CO
SUMMIT CO
MOUNT CO
CARBONDALE
NATIONAL FOREST
RIVER
FIGURE 3-1

Springs to reduce the likelihood and severity of debris flow incidents.

Proposals

- The zone would be designated as sensitive for utility and communication facilities (see Chap. 3, Utility and Communication Facility Management).
- The zone would be placed in urban and semi-urban ROS classes (see Appendix E, DEIS).
- The majority of this zone would be managed consistent with the VRM Class II (retention of the landscape character) objectives (see Chap. 3, Visual Resource Management).
- Off-road vehicle (ORV) use would be limited to designated roads and trails (see Chap. 3, Off-Road Vehicle Management).
- Surface facilities for oil and gas production would be prohibited in this zone.
- The zone would be designated as a fire exclusion zone (see Chap. 3, Fire Management).
- Livestock use would be limited to light grazing (see Chap. 3, Critical Watershed Areas).
- The zone would be designated as an ACEC for the protection of the watershed above the city of Glenwood Springs (see Chap. 3, Areas of Critical Environmental Concern).
- No timber management would be allowed within the zone.
- No vegetation manipulations for the benefit of wildlife or livestock are permitted within the zone.

Rifle and New Castle Municipal Watersheds

Municipal watersheds are the drainages from which municipalities derive their domestic water supplies. Two municipal watersheds occur partly on public land in the resource area. Beaver Creek south of Rifle is the municipal watershed for the town of Rifle. Approximately 7 percent of the watershed is public land with the remainder either private or national forest land. The public land has been used primarily for grazing in the past; this should continue to be its primary use in the future. East Elk Creek provides the town of New Castle with its water supply. Land status is approximately 20 percent public land with the remainder again either private or national forest land. The public land in this watershed has also been used historically for livestock grazing, but it also contains a large oakbrush acreage which is potentially valuable as fuelwood. This drainage is also crucial winter range for deer and elk. The management emphasis would be the protection of these watersheds to prevent further resource degradation which would result in decreased water quality.

Proposals

- The areas would be designated as sensitive for utility and communication facilities (see Chap. 3, Utility and Communication Facility Management).
- The Rifle area would be placed in a roaded-natural ROS class and the New Castle area into semi-primitive motorized and roaded natural ROS classes (see Appendix E, DEIS).
- The mineral restriction no surface facilities for oil and gas would be placed on the areas.
- The areas would be designated as fire exclusion zones (see Chap. 3, Fire Management).
- The Rifle area would be managed under VRM Class II (retention of the landscape character) and III (partial retention of the landscape character) objectives while the New Castle area would be managed under Class III and IV (modification of the landscape character) (see Chap. 3, Visual Resource Management).
- ORV use would be limited to designated roads and trails (see Chap. 3, Off-Road Vehicle Management).
- With the exception of a small fuelwood area within the New Castle municipal watershed, no timber management would be allowed.
- No vegetation manipulations for wildlife, livestock, or sawtimber management would be permitted within the areas. One stand of pinyon-juniper in the Rifle watershed is suitable for management.

Deep Creek

Deep Creek Canyon is a narrow steep-walled canyon that contains geological, ecological, and scenic resources of high value. This area contains the only primitive ROS setting on public land in the resource area. In conjunction with the portion of the canyon on national forest land, the area provides excellent opportunities for primitive types of recreation in a natural environment. Proposals would emphasize the management of this area to protect its important recreational, scenic, and natural values.

Proposals

- The area would be designated as unsuitable for utility and communication facilities (see Chap. 3, Utility and Communication Facility Management).
- The area would be closed to ORV use (see Chap. 3, Off-Road Vehicle Management).
- The area would be restricted from mineral development as follows: no surface facilities for oil and gas, no mineral sales, and no mineral location.
- The area would be designated as an ACEC for the protection of high quality visual values (see Chap. 3, Areas of Critical Environmental Concern).
- The area would be placed in primitive and semi-primitive non-motorized ROS classes (see Appendix E, DEIS).
- The area would be managed consistent with the VRM Class I (preservation of the landscape character) objectives (see Chap. 3, Visual Resource Management).
- The area would be designated as a fire management zone-ecosystem maintenance area (see Chap. 3, Fire Management).
- The area would be identified as a recreation management area (see Glossary).
- The area would be identified as a potential peregrine falcon introduction site.
- No timber management would be allowed.
- No vegetation manipulations would be permitted for livestock or wildlife management.

Hack Lake

The Hack Lake area is a densely forested block of public land adjacent to national forest land that possesses high recreational, scenic, wildlife, and cultural values. Hack Lake provides potential habitat for the state threatened and endangered Colorado River cutthroat trout. The historic Ute Trail passes through the area and provides access to the Flat Tops Wilderness. The area provides opportunities for primitive types of recreation, mainly hunting, camping, and fishing, in a natural setting. Management emphasis would be directed toward the protection of important recreational, natural, and primitive values.

Proposals

- The area would be designated as unsuitable for utility and communication facilities (see Chap. 3, Utility and Communication Facility Management).
- The area would be closed to ORV use (see Chap. 3, Off-Road Vehicle Management).
- The mineral restriction no surface facilities for oil and gas would be placed on the area.
- Ten acres of the area would be proposed as suitable for wilderness designation. (Pending Congressional decision, the area would be managed under BLM Wilderness Interim Management Guidelines. If the area was designated, it would be closed to all forms of mineral entry. If it was not designated, the 10 acres would be managed under the other recommendations proposed for the area listed here.) (See Chap. 3, Wilderness Management.)
- Management of Colorado River cutthroat trout would be proposed in Hack Lake.
- The area would be placed in a semi-primitive non-motorized ROS class (see Appendix E, DEIS).
- The area would be managed consistent with the VRM Class II (retention of the landscape character) objectives (see Chap. 3, Visual Resource Management).
- Hack Lake would be identified as a recreation management area (see Glossary).
- The area would include a proposal to maintain the Ute Trail (see Map 3-10).
- The area would be designated as a fire management zone-ecosystem maintenance area (see Chap. 3, Fire Management).
- No timber management would be permitted within the area.
- No vegetation manipulations for livestock or wildlife would be permitted in this area.

Bull Gulch

The Bull Gulch area is a large block of public land which contains geological, ecological, scenic, wildlife, and primitive recreation values. The stratified cliffs are a scenic backdrop for the upper Colorado River corridor. A relict community of ponderosa pine is within the area. Wildlife values include nesting and perching sites for raptors and big game winter range. The area provides excellent opportunities for hiking, camping, and hunting, but use is

currently limited by the lack of good physical and legal public access. Management of this area would emphasize the protection of important recreational, scenic, natural, and primitive values.

Proposals

- The area would be designated as unsuitable for utility and communication facilities (see Chap. 3, Utility and Communication Facility Management).
- Nine thousand seven hundred seventy-eight (9,778) acres of the area would be proposed suitable for wilderness designation. (Pending Congressional decision, the area would be managed under BLM Wilderness Interim Management Guidelines. If the area was designated, it would be closed to all forms of mineral entry. If it was not designated, the 9,778 acres would be managed under the other recommendations proposed for the area listed here. (See Chap. 3, Wilderness Management).
- The area would be placed in a semi-primitive non-motorized ROS class (see Appendix E, DEIS).
- The area would be managed consistent with the VRM Class I (preservation of the landscape character) objectives (see Chap. 3, Visual Resource Management).
- The area would be designated as an ACEC for the protection of visual values (see Chap. 3, Areas of Critical Environmental Concern).
- The area would be identified as a recreation management area (see Glossary).
- If the area was not designated wilderness, the entire area with the exception of one split estate section would be managed under the minerals restriction closed to oil and gas leasing.
- The area would contain a proposal to establish a semi-developed recreation site at Jack Flats for primitive camping (see Map 3-10).
- The area would be closed to ORV use (see Chap. 3, Off-Road Vehicle Management).
- The area would be designated as a fire management zone-ecosystem maintenance area (see Chap. 3, Fire Management).
- No timber management would be allowed.
- No vegetation manipulations for livestock or wildlife management would be permitted in this area.

Castle Peak

The Castle Peak area is a large block of public land that possesses a number of resource values including commerical timber, wildlife habitat, livestock grazing, scenery, and recreational opportunities for hunting, hiking, camping, snowmobiling, and cross-country skiing. The area contains a large volume of dead and downed timber because of a spruce beetle infestation in the 1950s. Public use of the area is currently limited because of the lack of legal public access. The management of this area would be directed toward the protection of important scenic and natural values while providing for the economic harvest of timber resources.

Proposals

- The area would be designated as sensitive for utility and communication facilities (see Chap. 3, Utility and Communication Facility Management).
- The Wilderness Study Area situated within this area would be proposed as nonsuitable for wilderness designation (see Chap. 3, Wilderness Management).
- Fisheries management would be proposed on three streams and one lake within the area (see Chap. 3, Aquatic Habitat Management).
- The area would contain proposals for management of riparian habitat for waterfowl (see Map 3-6).
- The area would contain the Castle Peak Forest Management Unit identified for intensive timber management (see Chap. 3, Forest Management).
- The area would be placed in a semi-primitive motorized ROS class (see Appendix E, DEIS).
- The area would be managed consistent with the VRM Class II (retention of the landscape character) and Class III (partial retention of the landscape character) objectives (see Chap. 3, Visual Resource Management).
- ORV use would be limited to designated roads and trails (see Chap. 3, Off-Road Vehicle Management).
- The area would be designated as a fire management zone-vegetation manipulation area (see Chap. 3, Fire Management).
- The area would contain proposals for vegetation manipulation projects for livestock and wildlife.

Thompson Creek

Thompson Creek Canyon is a narrow, steep-walled, forested canyon that contains outstanding geological, cultural, natural, and scenic values. The public land has been proposed as a natural environment area because of these values. The area has a high interpretive potential and has been identified by several local schools as well suited for environmental education opportunities. At the present time, lack of legal public access through private land at the eastern end of the canyon prevents full utilization of the area by the public. Management emphasis would be the protection of scenic, geologic, recreational, and primitive values.

Proposals

- The area would be designated as unsuitable for utility and communication facilities (see Chap. 3, Utility and Communication Facility Management).
- The area would be designated as a natural environment area (see Chap. 3, Recreation Resource Management).
- The area would be closed to ORV use (see Chap. 3, Off-Road Vehicle Management).
- The area would contain minerals restrictions as follows: interior—closed to mineral sales, oil and gas leasing, and mineral location; periphery—no surface facilities for oil and gas, no mineral sales, and no mineral location.
- The area would be placed in a semi-primitive non-motorized ROS class (see Appendix E, DEIS).
- The area would be managed consistent with the VRM Class I (preservation of the landscape character) objectives (see Chap. 3, Visual Resource Management).
- The area would contain proposals to develop three new trailheads for recreation use (see Map 3-10).
- The area would contain a proposal to develop a foottrail along north Thompson Creek (see Map 3-10).
- The area would be designated as a fire management zone-ecosystem maintenance area (see Chap. 3, Fire Management).
- No timber management would be allowed.
- No vegetation manipulations for livestock or wildlife management would be permitted in this area.

Upper Colorado River Special Recreation Management Area

The upper Colorado River between State Bridge and Dotsero is a highly scenic river corridor which is the most intensively used recreation area in the resource area. It is used primarily for floatboating and fishing. Along with the segment within the Kremmling Resource Area between Pumphouse and State Bridge, the special recreation management area receives the second largest amount of floatboating use of the ten major floatboating rivers in Colorado and generates 19 percent of the total whitewater boating expenditure in the state. The scattered public land is important for access to the river. The proposals would emphasize the protection of scenic and natural values associated with whitewater floatboating.

Proposals

- The area would be designated as sensitive for utility and communication facilities (see Chap. 3, Utility and Communication Facility Management).
- No vegetation manipulations for livestock or wildlife management would be permitted in this area.
- The area would contain several proposals for fisheries habitat management (see Chap. 3, Aquatic Habitat Management).
- The area would be placed in a roaded natural ROS class (see Appendix E, DEIS).
- The majority of the area would be managed consistent with the VRM Class II (retention of the landscape character) objectives (see Chap. 3, Visual Resource Management).
- The area would contain a proposal for a river access site at Twin Bridge (see Map 3-10).
- The area would contain several proposals for semi-developed recreation sites (see Map 3-10).
- Vegetation manipulations for livestock and wildlife would be allowed if the projects are not visually distractive to the area.

COMPARATIVE ANALYSIS

Table 3-20 compares the Proposed Plan with the Preferred Alternative (DEIS). The Proposed Plan is described only to the extent that it differs from the

Preferred Alternative. The comparative analysis for the other alternatives is located in the DEIS and can be used in conjunction with this table.

Table 3-20. Comparative Analysis

Preferred Alternative	Proposed Plan
Air Quality Management	
If the State of Colorado reclassified the areas recommended as suitable for wilderness designation, air quality standards would change from Class II to Class I on *340 acres* in *two* wilderness study areas (WSAs), thus protecting existing wilderness values. This change would have no significant impact on other resource programs in these areas. Air quality would deteriorate for the short term during implementation of vegetation manipulation projects, especially burning.	Same as Preferred Alternative (DEIS) except air quality standards would change from Class II to Class I on *10,118 acres* in *three* WSAs, protecting existing wilderness values.
Soils	
Vegetation manipulations proposed by forestry, water yield, and range and wildlife projects would increase erosion in the short term. Road construction in support of timber and mineral operations would also increase erosion. Long-term decreases in erosion would be expected from increased ground cover in vegetation manipulation areas and off-road vehicle (ORV) restrictions on 166,000 acres. Long-term increases in erosion would be expected in one intensive ORV use area.	Same as Preferred Alternative (DEIS) except no water yield projects would be proposed.
Water Quality Management	
In the long term, the existing quality of water originating on public land in the resource area would be maintained or improved by including water quality improvement features into other program proposals to the extent possible. In the short term, insignificant declines in water quality would occur from vegetation manipulation proposals, timber and woodland harvest, and mineral development. These declines would be minimized by including mitigation measures in the projects, by monitoring to ensure that state water quality guidelines and 208 plan sediment thresholds were not exceeded, and by recommending remedial actions if necessary. In *two areas,* the source of existing water quality problems and the feasibility of reducing them would be evaluated. If management is feasible, some improvements to water quality could occur. In the long term, increased cover in vegetation manipulation areas and in areas with ORV limitations would likely reduce sediment and salinity in local streams to a minor degree (see Map 3-1).	Same as Preferred Alternative (DEIS) except *four areas* would be evaluated to determine water quality problems.
Water Yield Management	
Water yield would increase by 7,200 to 9,900 acre-feet per year from water yield treatments in aspen areas, timber harvesting, and range and wildlife vegetation manipulations throughout the resource area. These figures represent a *6 to 9 percent* increase over existing water yield from public land in the resource area.	Water yield would increase ranging from 285 to 1,760 acre-feet per year, depending on the extent to which design features that increase water yield could be incorporated into other resource programs. Water yield increases would be expected from timber and woodland (aspen) harvesting and vegetation manipulations for wildlife and livestock in mountain brush areas. The water yield increase would be reached after approximately 5 years of implementation of the recommendations in the Proposed Plan. This increase represents a *.3 to 1.6 percent* increase over the existing yield from public land in the resource area.
Critical Watershed Areas	
Conditions in debris flow hazard areas would improve by placing restrictions on other activities, by managing as an area of critical environmental concern, and from recommendations in the Glenwood Springs Debris Flow Study. Conditions in municipal watersheds would probably be maintained by placing restrictions on other activities. Existing conditions in erosion hazard areas would be maintained by limiting off-road vehicle use to existing roads and trails.	Same as Preferred Alternative (DEIS).

Table 3-20. Comparative Analysis—Continued

Preferred Alternative	Proposed Plan
Minerals Management	
Closing *98,852 acres* to mineral location, *42,344 acres* to oil and gas surface facility location, *55,770 acres* to oil and gas leasing, and *11,552 acres* to mineral sales would reduce by a like amount the number of acres available to mineral exploration and development. These reductions could adversely affect the minerals industry in the long term. Valuable resources such as wilderness, recreation, public water reserves, municipal watersheds, water quality, and scenery would be protected.	Same as Preferred Alternative (DEIS) except *56,430 acres* would be closed to to mineral location, *10,738 acres* would be closed to to oil and gas leasing, *44,814 acres* would be closed to oil and gas surface facilities, and *16,534 acres* would be closed to to mineral sales.
Aquatic Habitat Management	
Aquatic habitat on 60 miles of stream and 2 lakes, including 31.9 miles and 2 surface acres of threatened Colorado River cutthroat trout habitat, would improve. *Seventy-five (75) miles* of stream and *14 surface acres* of lakes would be monitored. Long-term decreases in sediment resulting from vegetation manipulation practices would improve aquatic habitat conditions. Twenty-five (25) miles of stream habitat would become legally accessible, improving fishing and management opportunities. Overall insignificant short-term adverse impacts would result from increased sediment from vegetation manipulation projects.	Same as Preferred Alternative (DEIS) except that *74 miles* of streams and *14 surface acres* of lakes would be monitored.
Terrestrial Habitat Management	
Manipulating vegetation on *18,440 acres over a 10-year period* would improve habitat conditions for wildlife. Possible introductions of sage and sharptail grouse, turkey, peregrine falcon, and river otter would increase or stabilize declining populations and increase hunting and viewing opportunities. Initial forage allocation would allow a *21 percent decline* in existing big game populations. Vegetation manipulations to increase forage would allow a *7 percent decline* in existing big game populations. These allocations would be *38 percent and 27 percent short*, respectively, of meeting Colorado Division of Wildlife goals. An October 15 cut off date for livestock grazing on most of the crucial winter range and a November 15 cut off date on the remaining winter and summer range would benefit big game on *53 grazing allotments throughout the resource area through reduced competition.*	Manipulating vegetation on *19,840 acres over a 20-year period* would improve habitat conditions for wildlife. Possible introductions of sage and sharptail grouse, turkey, peregrine falcon, and river otter would increase or stabilize declining populations and increase hunting and viewing opportunities. *A portion of the Grand Hogback would be identified as a bighorn sheep study area.* Initial forage allocation would allow a *2.4 percent increase* in existing big game populations. Vegetation manipulations to increase forage would allow a *16.6 percent increase* in existing big game populations. These allocations would be *20.3 percent and 9 percent short*, respectively, of meeting Colorado Division of Wildlife goals. An October 15 cut off date for livestock grazing on most of the crucial winter range and a November 15 cut off date on the remaining winter and summer range would benefit big game on *53 grazing allotments throughout the resource area through reduced competition.*
Livestock Grazing Management	
Overall range condition and forage production could improve through management. The initial forage allocation of 37,852 animal-unit months (AUMs) would be 1 percent greater than the existing use. Vegetation manipulations on *113 allotments totaling 29,800 acres* would increase livestock forage production by *12,998 AUMs* for a total allocation of *50,850 AUMs.* This would be a *36 percent* increase over existing use and would be *11 percent* short of meeting the goal of the alternative (active preference).	Overall range condition and forage production could improve through management. The initial forage allocation of 37,852 AUMs would be 1 percent greater than the existing use. Vegetation manipulations on *98 allotments totaling 27,800 acres* would increase livestock forage production by *12,742 AUMs* for a total allocation of *50,594 AUMs.* This would be a *35 percent* increase over existing use and would be *11 percent* short of meeting the goal of the alternative (active preference).
Vegetation	
Approximately *8,000 acres* per year could be modified by various management actions resulting in short-term reduced ground cover and surface disturbance. Adverse impacts would be locally significant. In the long term, ground cover would increase and impacts would be insignificant. Long-term overall changes in vegetation-type distribution would be insignificant because of the large diversity of vegetation throughout the resource area.	Same as Preferred Alternative (DEIS) except approximately *4,000 acres* per year could be modified.

Table 3-20. Comparative Analysis—Continued

Preferred Alternative	Proposed Plan
Forest Management	
Intensive forest management on 17,905 acres of productive forest land and *58,555 acres* of woodland would result in increased forest productivity, revenues, and stand health and vigor. The annual allowable harvest would be 1.8 million board feet of sawtimber and 3,535 cords of pinyon-juniper.	Intensive forest management on 17,905 acres of commercial forest land (productive forest land) and *82,470 acres* of woodland would result in increased forest productivity, revenues, and stand health and vigor. The annual allowable harvest would be 1.8 million board feet of sawtimber, 3,535 cords of pinyon-juniper, and *2,930 cords of aspen and subalpine fir.*
Recreation Resource Management	
Existing recreational facilities would be maintained as would recreational values in Thompson Creek, Hack Lake, Bull Gulch, and Deep Creek. *Twenty-four (24) additional facilities* would be developed to help accommodate existing and future demand. Providing public access to several areas with high recreational values would moderately increase recreational use.	Same as Preferred Alternative (DEIS) except *23 additional facilities* would be developed to help accommodate existing and future demand. (Note: The Burns site is no longer available for purchase as a river access site.)
Social and Economic Conditions	
The net economic impact of this alternative would be *negative* and small. A *decrease* in forage available to big game could yield an eventual *decrease of $1.5 million* in personal income. This would reduce area income by about ½ of 1 percent resource area wide. The income reduction associated with reduced wildlife-related recreation expenditures would be significant because it would largely occur in the fall—traditionally a slow economic period. Some of that reduction would be offset by increased income brought about by expanded sales of timber and fuelwood. Although the net change in livestock forage allocations would be minimal, several ranching operations could see significant changes in their net revenue. Sales of public land could generate up to *$12.5 million* in federal revenues.	The net economic impact of this alternative would be *positive* and small. An *increase* in forage available to big game could yield an eventual *increase of $1 million* in personal income. This is less than ½ of 1 percent of total personal income resource area wide. But, it would be significant because it would largely occur in the traditionally slow fall period and because it would focus on those sectors that provide services to hunters. Further income growth would be brought about by expanded sales of timber and fuelwood. Although the net change in livestock forage allocation would be minimal, several ranching operations would see significant changes in their net revenue. Sales of public land could generate up to *$10.5 million* in federal revenues.
Cultural Resource Management	
The Blue Hill Archaeological District and high-value sites would be protected. Projects would be inventoried for cultural resources prior to project approval. Measures would be taken to protect any cultural resources found. New information would become available as a result of these inventories.	Same as Preferred Alternative (DEIS).
Paleontological Resource Management	
Projects would be inventoried for paleontological resources in Class I areas prior to project approval. Measures would be taken to protect any paleontological resources found. New paleontological information would become available as a result of these inventories.	Same as Preferred Alternative (DEIS).
Wilderness Management	
Wilderness values on *340 acres* in *two* wilderness study areas (WSAs) would be preserved. Wilderness values on *30,290 acres* would be adversely affected by nondesignation. A total of *13,550 acres* (primarily in Hack Lake and Bull Gulch) adversely affected by nondesignation would be managed through other resource programs to protect existing natural values.	Wilderness values on *10,118 acres* in *three* WSAs would be preserved. Wilderness values on *19,876 acres* would be adversely affected by nondesignation. A total of *3,350 acres* in Hack Lake adversely affected by nondesignation would be managed through other resource programs to protect existing natural values.
Areas of Critical Environmental Concern (ACECs)	
Four areas totaling 20,037 acres, 12 streams totaling 31.9 miles, and one lake of 2 surface acres would be designated as ACECs to protect fragile and unique resource values.	*SFive areas* would be designated as ACECs to protect fragile and unique resource values. *Those streams and lakes identified in the Preferred Alternative (DEIS) would not be designated as ACECs under the Proposed Plan.*

Table 3-20. Comparative Analysis—Continued

Preferred Alternative	Proposed Plan
Visual Resource Management Existing visual quality would be maintained on 92 percent of the resource area. Visual quality would be reduced on 8 percent of the resource area because of vegetation manipulation and adjacent land use. Impacts of these visual quality changes would be minimal as they are not within major viewsheds. Two areas with high visual quality—Bull Gulch and Deep Creek—would be protected as ACECs.	Same as Preferred Alternative (DEIS) except Bull Gulch and Deep Creek would be designated visual resource management (VRM) Class I. Thompson Creek Natural Environment Area also would be upgraded to VRM Class I.
Land Tenure Adjustments Two zones were identified to guide land tenure adjustments: disposal and rentention. The acreage proposed in disposal zones totals *23,245 acres* of both small and moderate-sized isolated parcels. Of this acreage, 12,220 acres would be given preference for exchange rather than sale.	Same as the Preferred Alternative (DEIS) except the acreage proposed in disposal zones totals *15,500 acres* of primarily small, isolated parcels. No acreage would be given preference for sale or exchange.
Off-Road Vehicle Management Restrictions on off-road vehicle (ORV) use on 172,427 acres would protect fragile and unique resource values. Because closures are less than 4 percent of the total public land in the resource area (20,4267) and ORV use would not be completely eliminated in the limited areas, the loss of ORV use opportunities would be insignificant. Designating an area for intensive ORV use would provide recreational ORV users an area in which to recreate.	Same as Preferred Alternative (DEIS) except a small amount of acreage in the limited ORV category would be changed from existing roads and trails to designated roads and trails.
Transportation Management Additional public access would be provided to the most demanded public land areas on approximately *43 miles* of road and 48 miles of trail. *Fifty (50) easements* would also be acquired. This would significantly improve use of public land. Road conditions would be improved on existing substandard roads. Restrictions on ORV use on 172,427 acres would protect sensitive resource values significantly and insignificantly limit ORV opportunities.	Same as Preferred Alternative (DEIS) except approximately *41 miles* of road and *48 easements* would provide additional access to the most demanded public land areas. The miles of trail (48 miles) would be the same under both alternatives.
Utility and Communication Facility Management Three classifications would be identified to guide the management of utility and communications facilities: unsuitable, sensitive, and suitable for consideration. Under this alternative, *22,673 acres* would be identified as unsuitable and *85,110 acres* would be identified as sensitive to the locations of facilities.	Same as Preferred Alternative (DEIS) except *20,756 acres* would be identified as unsuitable and *101,293 acres* would be identified as sensitive to the locations of facilities.
Fire Management Three classifications would be identified to guide the management of wildfire in the resource area: fire exclusion, fire management, and fire suppression. Management zones would provide direction in using fire as a management tool to help accomplish other resource objectives. Under this alternative, *73,380 acres* would be identified as fire exclusion zones, *179,840 acres* would be identified in fire management zones, and *312,822 acres* would be included in fire suppression zones.	Same as Preferred Alternative (DEIS) except *25,090 acres* would be identified as fire exclusion zones and *241,090 acres* would be identified in fire management zones. The *299,672 acres* of fire suppression zones would remain the same under this alternative.

CHAPTER 4

AFFECTED ENVIRONMENT

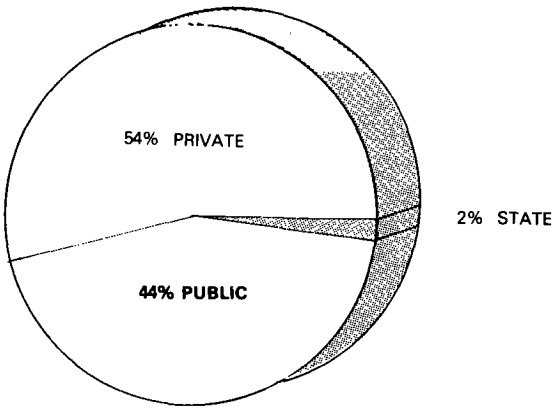
CHAPTER 4

AFFECTED ENVIRONMENT

INTRODUCTION

Chapter 4 contains a general description of the resources that would be affected by the proposed management actions in Chapter 3. Additional information is available in the Glenwood Springs Resource Area office. Geology, topography, and noise would not be affected by the proposed management actions and are therefore not described in this environmental impact statement. Prime and unique farmlands also are not described because none exist on public land in the resource area.

FIGURE 4-1



LAND OWNERSHIP
IN THE GLENWOOD SPRINGS RESOURCE AREA

SETTING

The Glenwood Springs Resource Area is located in west central Colorado. It is bordered on the north and east by the Bureau of Land Management (BLM) Craig District and White River National Forest, on the south by the White River and Grand Mesa National Forests and the BLM Grand Junction Resource Area, and on the west by the BLM Grand Junction Resource Area.

The area lies primarily within Garfield, Eagle, and Pitkin Counties with smaller parts in Routt and Mesa Counties. Approximately 1,280,000 acres of public, state, and private lands lie within the resource area boundaries. Of this total, 566,042 acres are administered by the BLM. Figure 4-1 shows the percentage of land within each ownership.

The BLM administers the minerals on all public land and approximately 206,290 acres underlying non-public land.

Because of the wide variations in elevation and topography within the resource area, the climate is extremely variable.

The Colorado River runs through the resource area and together with the Roaring Fork and Eagle Rivers provides the major drainage. Terrain is very rugged and is characterized by many high peaks, ridges, and side valleys. Mean annual temperature ranges from 40 degrees at Aspen to 47 degrees at Rifle. The growing season (at 32 degrees) varies between 70 days in Eagle to 138 days in Glenwood Springs, with much shorter growing seasons in the high mountains. This information reflects only the stations with available data; the high mountains are much colder (Pedco 1981).

The relatively low annual average total precipitation ranges from less than 12 to more than 30 inches. Annual snowfall averages from 42 inches in Rifle to 140 inches in Aspen. The number of days with greater than 1 inch of snow on the ground averages annually between 48.3 to 217.2 days with an average April mountain snowpack depth of 24 to 58 inches (again showing the great variation between the lower western valleys and the higher mountains). Hail is relatively infrequent in this resource area; the highest annual average number of days of hail (5.8) occurs at Independence Pass (Pedco 1981).

Winds measured at Aspen and Rifle typify the channeling and mountain valley flows experienced in the resource area. In areas such as Aspen, Snowmass, and Eagle, nighttime cooling often leads to very stable air and inhibited mixing and transport in the valleys. Dispersion potential improves farther west and at the ridge and mountain tops, especially during winter-spring weather transition periods and summertime convective heating (Pedco 1981).

AIR QUALITY

The Glenwood Springs Resource Area lies within Colorado Air Quality Control Regions 11 and 12. Four state-operated monitoring stations at Rifle, Glenwood Springs, Aspen, and Vail measure total suspended particulates within these regions (Table 4-1).

Table 4-1. Selected Total Suspended Particulate Data

(in micrograms per cubic meter)

Station/Period	Number of Observations	Annual Geometric Mean	First 24-hour Maximum	Second 24-hour Maximum
Aspen Courthouse				
1981	86	[1]80	.....	[1]247
1980	89	[1]80	.....	[1]260
1979	87	66	241	[1]234
Eagle Courthouse				
1979	57	[2]94	210	[1]209
1978	45	[2]104	412	[1]218
Glenwood Springs Courthouse				
1981	83	63	.....	[1]198
1980	88	68	203	[1]199
1979	85	57	188	[1]173
Grand Valley High School				
1978	51	[2]55	213	[1]208
1977	35	[2]52	334	[1]217
Naval Oil Shale Reserve				
6/81-9/81	14	[2]24	37	.....
6/80-9/80	.....	.....	30	.....
Rifle, Third Avenue				
1981	80	[1]99	.....	[1]411
1980	69	[1]156	510	[1]479
1979	83	[1]128	694	[1]660
Vail, Medical Building				
1981	80	62	.....	[1]231
1980	92	[1]75	.....	[1]335
1979	67	[2]75	285	[1]223

Sources: Colorado Department of Health and TRW Energy Engineering Division, 1981.
[1]Violation of ambient air quality standards
[2]Insufficient data to determine reliable average

Of all the major cities in the resource area, only Glenwood Springs and Vail did not exceed annual and 24-hour primary standards for total suspended particulate concentrations in 1981. These cities did exceed the 24-hour secondary standards, however. Limited travel activity on unpaved roads and good air drainages probably account for the lower particulate levels at these sites.

The *1977 Clean Air Act* amendments require nonattainment areas (areas that do not meet national ambient air quality standards) to meet standards by December 31, 1982. Although Aspen, Vail, Eagle, Glenwood Springs, and Rifle currently exceed national ambient air quality standards, Environmental Protection Agency policy prevents rural areas being classified "nonattainment areas" for total suspended particulates exceedance due primarily to windblown dust. The Environmental Protection Agency may alter existing total suspended particulates regulations to reflect the difference between wind blown dust and combustion particulates by setting standards for fine particulates (less than 10 microns in diameter).

Long winter seasons, seasonally low temperatures, dramatic influx of people during the ski season, heavy fireplace usage, heavy automobile traffic, extensive fuel consumption for space heating, and poor dispersion conditions accounted for high total suspended particulate levels in Aspen and Vail.

Fugitive road dust from the many unpaved roads, rural activity, active construction and development, and limited industrial and mining activity are probable particulate sources in Rifle. Since monitoring

began in Rifle (1974), annual measurements have exceeded all particulate standards. Particulate levels remain high not only in the winter but also in the summer.

Fugitive road dust is probably the major particulate contributer in Eagle. Unlike Aspen and Vail particulate levels remain high even during the summer months.

Air quality in the resource area is likely to worsen as development in Aspen and Vail expands. The Colorado, Eagle, and Roaring Fork River Valleys will experience the heaviest development and also the worst air quality impacts, mostly due to wood-burning fireplaces in winter months and increased construction activities related to energy development.

Modeling results indicate a high potential that oil shale development will cause total suspended particulates to be exceeded along the Roan Cliffs and Grand Hogback north of Rifle (BLM 1982). Although required construction and operation air quality permits should minimize impacts from industrial facilities, secondary impacts from regional growth will continue to be a problem.

Three Class I air quality areas are adjacent to public land in the Glenwood Springs Resource Area (Flat Tops, Eagles Nest, and Maroon Bells-Snowmass Wilderness Areas). All three areas are administered by the U. S. Forest Service, Region II. Limitations on the additional amount of pollution allowable in these areas from new major emitting facilities are strict. The BLM must consider these limitations when air quality impacts are anticipated from proposed actions. The remainder of the resource area is classified on a Class II air quality area, where similar but less stringent incremental pollution standards apply.

SOILS

Soil Types and Properties

Soils in the Glenwood Springs Resource Area are either residual, derived from sandstone and shale, or alluvial, derived from mixed alluvium. They have been grouped into 27 soil associations and are depicted on a map in the resource management plan documentation files in the Glenwood Springs Resource Area office. Soil information was obtained from third-order soil surveys done by the U. S. Soil Conservation Service since 1975. The final correlation of this soil inventory has been done in the past three years.

Erosion Conditions

Erosion conditions on public land within the Glenwood Springs Resource Area are quite variable. Soil erosion condition classes of major geographic areas in the Glenwood Springs Resource Area are as follows.

Areas with low to moderately-low soil loss (18 percent of the resource area) are the Naval Oil Shale Reserve; upper Garfield, Baldy, Divide, Lake and Beaver Creek drainages; Roaring Fork and Gypsum-Eagle Valleys; and the Missouri Heights, Cottonwood Pass, Monegar Ridge and King Mountain areas.

Areas with moderate to moderately-high soil loss (28 percent of the resource area) are the Parachute, Rifle, and Silt Valleys; the area north of Rifle and Silt between the Grand Hogback, including the lower Government Creek drainage; and the Divide Creek, Red Dirt Creek (Eagle County), Bull Gulch, Castle Creek, lower Eiby Creek, and Alkali Creek drainages.

Areas with high to very high soil loss (54 percent of the resource area) are the Battlement, Flatiron, and Grand Mesas; Grand Hogback; Gypsum badlands near Dotsero, Gypsum, and Eagle; Red Dirt Creek drainage (Routt County); and the steep, southerly escarpments along the Naval Oil Shale Reserve.

Erosion condition classes range from low to very high (Map 4-2, DEIS Map Addendum). Generally, the lower erosion condition classes occur on land adjacent to private lands and on upland benches and mesas. Areas with low erosion condition classes generally occur on the more stable soils having good ground cover. In most instances, land treatment practices could be applied to these areas without any significant impacts to the soil resource.

The higher erosion condition classes usually include the steeper valley sideslopes, alluvial fans, and ridgecrests where the soils are shallower and are unable to allow good ground cover to become established.

Areas characterized by high and very high erosion conditions generally have excessive rates of geologic erosion because parent materials are soft and easily erodible, slopes are steep, and vegetative cover is poor. Usually, past or present management of these areas has had little effect on the high erosion rates.

Primary factors contributing to erosion, other than geologic erosion, are overgrazing (both domestic livestock and wildlife), off-road vehicle use, improp-

er construction techniques, poor locations of roads, and mineral exploration/development.

Trends in erosion condition are improving as a result of improved management practices, such as allotment management plans, habitat management plans, and other activity plans.

Soil Productivity

Soil productivity is the potential of a soil to produce vegetation. Productivity of soils within the Glenwood Springs Resource Area varies from low to high. Factors contributing to low productivity in soils include one or more of the following.

1. Low available water-holding capacity of the soil.
2. Low nutrient availability.
3. High erosion rates.
4. Excessive alkalinity or salt content.
5. Large percentage of cobbles and stones on the surface.

Usually, the less productive soils in the resource area are found in the dry valley bottoms at lower elevations (particularly the western third of the resource area), on steep mountain slopes and ridgecrests, and on gypsum-derived soils surrounding the Gypsum-Eagle Valley.

WATER RESOURCES

The Glenwood Springs Resource Area lies entirely within the upper Colorado River Basin, an area of about 7,370 square miles. Approximately 900 square miles of the basin is public land managed by the Glenwood Springs Resource Area. Five major subbasins—the upper Colorado, lower Colorado, Eagle and Roaring Fork Rivers, and Parachute Creek—lie partly within the resource area (Map 4-3, DEIS Map Addendum).

Surface Water

Quantity

Annual precipitation in the resource area ranges from less than 12 to more than 30 inches with the majority of the resource area averaging 20 inches or less. Water yield ranges from a low of less than 0.1 inch of runoff along the Colorado River in the western portion of the resource area to as much as 20 inches in the high elevation areas such as Black and King Mountains, Castle and Sunlight Peaks, and Hack Lake. The average runoff from public land in the resource area is 2 inches or less.

Table 4-2 shows the average annual water yield for each of the subbasins. The annual water yield from public land in the resource area averages about 109,000 acre-feet. This represents 4.2 percent of the yield of the entire Colorado River Basin above DeBeque (near the western boundary of the resource area). Table 4-3 shows the range in precipitation and runoff of the vegetation zones in the resource area.

Table 4-2. Annual Water Yield in the Glenwood Springs Resource Area

Subbasin	Total Area (square miles)	Public Land (square miles)	Annual Water Yield	
			Total Area (acre-feet)	Public Land (acre-feet)
Upper Colorado River	3,450	250	1,103,800	28,350
Eagle River	944	165	407,200	17,050
Roaring Fork River	1,451	[1]65	829,600	12,400
Lower Colorado River	1,327	323	248,220	42,600
Parachute Creek	198	74	23,180	9,100
Total	7,370	877	2,612,000	109,500

[1]Average flow subsequent to transmountain diversion through Charles H. Boustead Tunnel

Table 4-3. Water-Yielding Vegetation Zones on Public Land in the Glenwood Springs Resource Area

Vegetation Type	Acres	Annual Rainfall (inches)	Annual Water Yield (inches)
Semi-desert shrub	86,526	8-20	<1-4
Pinyon-Juniper	209,541	12-18	<1-3
Mountain Brush	166,897	16-24	1-6
Aspen	36,402	20-40	up to 20
Conifer	34,408	28-30	12-15
Grass/Meadows	32,628	25-40	3-15
Total	566,042		

Sources: Hibbert 1979; BLM 1979.

Peak flows on the major tributaries typically occur during May and June in response to spring snowmelt while low flows occur during the winter when surface runoff is minimal. Intense summer thunderstorms are often responsible for peak flows on the smaller tributaries and are the cause of locally severe flooding and debris flow problems at several sites within the resource area.

Demand

The majority of the Colorado River Basin is in an arid or semiarid area whose development is inextricably tied to the water available on the Colorado River. Between the upper and lower basin states and Mexico, the water annually available in the Colorado River is already overallocated, and future development will place a greater strain on the ability to supply the competing demands. In Colorado, supply currently exceeds demand during spring runoff, but many junior appropriators are required to halt their diversions during the latter portions of the irrigation season in order to satisy the rights of senior appropriators. The existence of a large amount of conditional water rights (rights which declare the intent of the holder to develop and put to beneficial use additional water) indicate that the demand will increase in the future.

Quality

Water quality is monitored principally by the Colorado State Health Department and the U. S. Geological Survey. Much of the water quality information collected is not directly applicable to water originating on public land because many of the stations are located on major tributaries. Water quality at these stations is affected by national forest, private, and public lands.

Typically, water quality in headwater areas (many of which lie on national forest land) is good, meeting all federal water quality standards. In the lower reaches, however, one or more of the pollutants such as sulfate, manganese, bacteria, or total disolved solids may exceed drinking water standards.

The major water quality problems associated with public land are salinity (mineral salts) and sediment. Table 4-4 shows the amount of salts that are derived from surface runoff in the subbasins annually and the amount contributed by public land.

Table 4-4. Salt Load in the Glenwood Springs Resource Area Subbasins

Subbasin	Total Area (tons)	Public Land (tons)	Salt Concentration (mg/1)
Upper Colorado River	280,000	13,300	210
Eagle River	151,200	11,750	281
Roaring Fork River	308,100	3,150	263
Lower Colorado River	746,556	26,360	406
Parachute Creek	24,043	2,780	753
Total	1,510,000	57,340	1,913

Source: BLM 1981.

Discharge from saline hot springs (three of which are located on public land) and seeps between Dotsero and New Castle add 500,000 tons of salts each year to the Colorado River and increase salinity by 140 milligrams per liter (mg/l) at Glenwood Springs (Ozga, Personnel Communication 1982). The Bureau of Reclamation is currently investigating methods for capturing and disposing of these salt laden waters. The salts in these hot springs and the salts entering the resource area's water bodies from other locations are ultimately derived from the rocks and soils in the major subbasins. Geologic formations that contribute most significantly to the salinity of the Colorado River Basin are sedimentary rocks of marine or lacustrine origin (such as Mancos Shale, Eagle Valley Evaporite and the Green River Formation) which contain highly soluble minerals that are easily leached by water passing over or through them (BLM 1978). Water quality measurements by the BLM on resource area streams have indicated salinities as high as 2500 mg/l for streams that pass through these formations. This is five times the recommended drinking water standard of 500 mg/l.

Outcrops of one or more of these formations on public land occur in every subbasin. The Environmental Protection Agency estimates that 52 percent of the salt load entering the Colorado River in the upper basin originates from natural sources (diffuse and unidentified point sources) which include public land, national forest land, national parks, Indian land, and private and state rangeland (BLM 1978). The estimated salt load entering the resource area's water bodies from public land is 57,000 tons per year (BLM 1981).

Sediment in the resource area results from sheet or rill erosion and channel erosion. Both are significant sources of sediment. Map 4-5 (DEIS Map Addendum) indicates sediment yield condition classes in the resource area. Acreages of public land in each condition class are indicated in Table 4-5.

Table 4-5. Sediment Yield Condition Classes for Public Land in the Resource Area

Condition Class	Tons/ Acre/Year	Acres	Percent of Resource Area
Very Low	< 0.28	41,000	7.1
Low	0.28-0.56	145,500	25.2
Moderate	0.56-1.40	214,000	37.1
High	1.40-2.80	147,000	25.5
Very High	2.80-8.40	29,000	5.0

Source: Adapted from *Sediment Yield Map for Colorado* published by the Colorado Land Use Commission (1974).

Most problems with sheet erosion occur in areas where ground cover is scarce. Channel erosion, the other major source of sediment, results from erosion of banks along perennial and intermittent streams and from gully formation. Channel stability along perennial streams is rated fair or poor in most of the resource area. Gully formation is also a problem, particularly in low rainfall areas subject to high intensity thunderstorms and where soils are derived from saline geologic strata.

Water Quality Problem Areas. A baseline water quality inventory was conducted during the inventory phase of the resource management plan to characterize water types in the resource area and to identify areas on public land that may be contributing to water quality problems. Map 3-1 indicates four areas which were so identified. The Divide Creek area was identified because of high levels of sediment, salinity, and bacteria and the high erosion hazard of soils in much of the drainage. The areas to the north and south of the Colorado River between Burns and State Bridge were identified because of high levels of sediment, bacteria, and salinity and because of high temperature and reduced dissolved oxygen levels. The Milk and Alkali Creek drainages were identified because of the high levels of sediment that come from the Pierre and Mancos Shale derived soils in the area and because of high salinity levels and poor benthic diversity. The Horse, Willow, and Poison Creek area was identified as a source of high salinity levels in a 1978 study conducted by the BLM (BLM 1978). Other problems such as high sediment levels; poor channel stability; very high erosion hazard; high temperature, sulfate, and manganese levels; poor riparian vegetation; and low dissolved oxygen levels were also indentified in the inventory.

Critical Watershed Areas

Critical watershed areas are shown on Map 3-3 (FEIS) and include the municipal watersheds of Rifle and New Castle, the debris flow hazard area above the city of Glenwood Springs and the unincorporated area of West Glenwood Springs, and erosion hazard areas distributed throughout the resource area. The municipal watersheds of Rifle and New Castle provide the domestic water supply for the residents of these towns. Approximately 20 percent and 7 percent, respectively, of the New Castle and Rifle watersheds are public land.

The debris flow hazard area has historically been an area from which debris flows have resulted in significant damage to property in the developed areas of Glenwood Springs and West Glenwood Springs. These debris flows continue to present a serious hazard to life and property. In general, public land lies in the upper watershed areas which are a source of runoff. Public land watersheds provide the runoff that helps to transport the debris flows but are not a source of debris. The debris is generally derived from the steep slopes adjacent to the town and below the upper watershed areas.

Erosion hazard areas are areas where the soils have a high erosion hazard (see Map 4-2, DEIS Map Addendum) and where off-road vehicle (ORV) use is occurring. In a study conducted for the BLM in California (Snyder et al. 1976), ORV use was found to be detrimental to watershed conditions. Adverse effects included reduction in plant cover, increased soil compaction, reduced permeability, and increased runoff and erosion. The most serious watershed impact resulted from the soil compaction and reduced permeability. Soil compaction reduces depth of moisture penetration which deprives plants of moisture needed for growth and results in reduced watershed cover. In some instances, compaction may be irreversible.

Ground Water Resources

Quantity

Most public land watersheds in the resource area produce little direct surface runoff. However, they provide important ground water recharge and discharge areas. These recharge and discharge areas contribute significantly to baseflow, particularly during low flow conditions in the fall and winter. Table 4-6 indicates the ground water contributions to selected streams and rivers in or near the resource area.

Development of the resource area's ground water resources has been minimal except in the Roaring Fork Basin, where extensive municipal development is occurring, and in agricultural areas of the lower Colorado River subbasin. In other areas, sparse human habitation, poor ground water quality, and generally adequate surface water supplies have precluded extensive ground water development. Physical and hydrologic characteristics and locations of major aquifers underlying the resource area are indicated in Appendix I (DEIS). While vast supplies of water exist in some of these aquifers, the most extensively developed are those deposits within the stream valleys in the area. These deposits are typically in close hydraulic contact with the adjacent surface streams and periodically are recharged by or discharge to these streams depending on whether stream flows are high or low (BLM 1978). Other major formations with the potential to produce water of usable quantity and quality within the resource area include the Dakota Sandstone,

Table 4-6. Ground Water Contribution to Flow of Selected Streams in the Resource Area

Station	Number of Years of Record	Ground Water Discharge	
		Percent of Total Stream-flow	Average Annual (cubic feet per second)
Piney River near State Bridge	22	22	16
Rock Creek near Toponos	14	29	9
Brush Creek near Eagle	16	50	22
Eagle River below Gypsum	20	34	193
Crystal River above Avalanche Creek	9	22	63
Thompson Creek near Carbondale	13	15	6
Cattle Creek near Carbondale	10	27	4
East Rifle Creek near Rifle	15	86	35
Beaver Creek near Rifle	14	23	1

Source: Boettcher 1972.

the Mesa Verde Group, and the upper levels of the Green River, Maroon Weber, and Basalt Formations.

Quality

Ground water salinity is generally higher than surface water salinity because the slower moving ground water has longer contact with the soluble minerals. Consequently, ground water contributes significantly to the natural salinity of streams in the resource area (BLM 1978). As an example, the Eagle River, which receives 34 percent of its annual discharge from ground water inflow, receives 58 percent of its annual salt load from that ground water inflow (BLM 1978).

Geologic formations that produce highly saline ground water in the resource area include the Mancos Shale, Eagle Valley Evaporite and Green River Formation (Appendix I, DEIS). The valley fill deposits generally yield less saline water than other ground water sources because the alluvium is generally highly permeable and most of the highly soluble minerals that it may have contained have been leached (BLM 1978).

Water Use

BLM management programs require water for livestock and wildlife. The location of water sources influence livestock distribution which affects the intensity of vegetation use. The BLM has developed about 190 springs and has constructed 161 stock reservoirs and 17 watersavers to provide water for livestock and wildlife. The BLM has also constructed approximately 200 retention dams (erosion control structures) which provide temporary water storage following storms. Estimated livestock and big-game water consumption on public land in each subbasin is indicated in Table 4-7.

Table 4-7. Livestock and Big Game Water Consumption on Public Land in the Resource Area

Subbasin	Annual Water Consumption (acre-feet)
Upper Colorado River	32.7
Eagle River	34.8
Roaring Fork River	18.7
Lower Colorado River	55.0
Parachute Creek	9.3
Total	150.5

Source: BLM 1981.

MINERALS

The resource area contains 566,042 acres of public land and 206,290 acres of federally-reserved minerals with private ownership. For administrative purposes, mineral entry on public lands is divided into three broad categories: (1) leasables, (2) locatables, and (3) salables.

Leasables

Oil and Gas

The federal government owns the federal oil and gas reserves underlying approximately 772,332 acres of public and private lands with federal minerals. Presently, 460,400 acres overlying federal minerals are under lease. The BLM averages from 5 to 10 applications for permits to drill annually. Approximately 40 wells are currently producing.

Although more than half of the resource area is currently under oil and gas lease, almost all of the activity is located in the Garfield Capability Unit west of the Grand Hogback.

Based on sedimentary outcrops, approximately 752,600 acres of the federal oil and gas reserves have potential for oil and gas. The remaining approximate 5,500 acres have Precambrian and metamorphic outcrops which indicate no oil and gas potential. These areas are located along the major drainages in the Glenwood Canyon north of the Colorado River.

Coal

The Grand Hogback coal field, based on coal potential, is the only area on public land considered economically feasible to mine within the resource area. The amount of coal in the Grand Hogback is estimated at approximately 1.6 billion tons. This estimate is based on surface outcrops and geologic inference rather than on specific inventory data. Specific inventory information will not be available until after land use planning is completed.

Only one federal coal lease, totaling 120 acres, is present within the resource area boundaries. It is located on the hogback in the Harvey Gap area and is presently inactive. While other mines exist within the resource area, the coal deposits within those mines are privately owned.

Two active coal companies are located within the White River National Forest—Mid-Continent Resources and Snowmass Coal Company. Mid-Continent controls seven federal leases totaling 5,310 acres, and Snowmass has two federal leases totaling 4,960 acres.

Oil Shale

Although vast amounts of oil shale exist within the western half of the Glenwood Springs Resource Area, the BLM is responsible for administering the oil shale reserves underlying only 31,204 acres of public and private lands with federal minerals. The total reserves underlying this land are estimated at 7.5 billion barrels of oil. At the present time, the BLM is not considering leasing of this oil shale.

Geothermal

Geothermal features exist at Dotsero, Glenwood Springs, Penny (Avalanche), South Canyon, and Conundrum. Approximately 254 square miles within the resource area boundaries, primarily administered by BLM, have been identified as prospectively valuable for geothermal energy. This approximation is based largely on the existing geothermal features such as hot springs.

No federal geothermal leases have been issued on public land within the resource area to date; however, three applications have been filed in the South Canyon and Glenwood hot springs areas.

Potassium

Potassium occurs in the Eagle Valley near the towns of Gypsum, Eagle, and Avon and near the mouth of Cattle Creek in the Roaring Fork Valley. Approximately 130,000 acres in the resource area have been identified as potentially valuable for potassium. Potassium has never been mined commercially within the resource area. However, in the Eagle-Gypsum area, two prospecting permits are pending.

Locatables

Locatable minerals in the resource area include metals (gold, silver, lead, and copper) and nonmetals (gypsum, limestone, vanadium, and uranium).

Numerous metaliferous mining claims exist in the resource area, but no significant mining activity has taken place.

Activity associated with non-metals has been much greater. Commercial production of limestone from public land was about 30,000 tons in 1980. In the next few years, commercial production on public land is expected to reach 190,000 tons per year. The limestone is primarily exposed along stream and river corridors between the Grand Hogback and Dotsero. Numerous inactive gypsum claims (near Eagle and Gypsum) and uranium and vanadium claims and mines (in the vicinity of the Grand Hogback) exist in the resource area.

Except for those areas presently closed to locatables, all federal and private lands with federal minerals are open to prospecting and mining.

Salables

Salable minerals include moss rock, scoria, sand and gravel, top soil, and fill dirt. Salables activity is primarily limited to small commercial sales for products used in the commercial and residential construction industries. Salables are expected to increase as the construction industry and its ancillary activities increase.

At present, 18 areas have been identified as suitable for salable mineral extraction within the resource area. However, requests for these minerals are considered in all areas that have not been closed to mineral entry.

Valuable sand and gravel deposits are located along the Colorado River west of New Castle. Several active gravel pits are currently in operation supplying material for construction and industrial purposes. The sand and gravel on the Colorado River west of Rifle has been found to be unsuitable for concrete aggregate by the State Highway Department and many construction firms because of contamination from shale formations.

AQUATIC WILDLIFE

Sixty-seven streams and 5 lakes support fish in the resource area. The BLM manages the aquatic and riparian habitat of portions of 56 streams (totaling 126 miles) and 5 lakes. In addition, 6 streams (5.1 miles of public land frontage) that do not presently support a fishery have potential for introducing a fishery.

The most productive fisheries occur in the Colorado, Roaring Fork, Eagle, Fryingpan, Piney, and Crystal Rivers, which make up about 32 percent of the total public land stream frontage providing an existing fishery. A relatively minor amount of the total miles of rivers and streams in the resource area occurs on public land.

Most streams tributary to the major rivers sustain a self-perpetuating fishery or are stocked regularly by the Colorado Division of Wildlife. However, most lakes and reservoirs that provide fisheries have been stocked at some time. Some of these streams provide spawning areas for fish that reside in the rivers. Approximately 14 streams and 3 lakes on public land are regularly stocked by the Colorado Division of Wildlife.

Two species presently listed by the State of Colorado as threatened occur in public streams. They are the Colorado River cutthroat trout *Salmo clarki pleuriticus* (8 public streams and 1 lake) and the razorback sucker *Xyrauchen texanus* (Colorado River below Rulison) (U. S. Fish and Wildlife Service 1981).

During the summers of 1975 through 1979, 112.9 miles of public streams were inventoried for fish habitat, channel stability, and fish presence. A numerical rating system was used to compare stream conditions and percent of optimal habitat based on nine habitat attributes. This rating system numerically evaluated bottom composition, pool quality, riffle quality, pool to riffle ratio, stream canopy, bank cover, bank stability, percent of bare ground, and presence and size of beaver ponds. Using this method, 11.7 miles of streams were rated in excellent condition; 20.1 miles, in above average condition; 24.1 miles, in average condition; 49.2 miles, in below average condition; and 7.8 miles, in poor condition.

Table 4-8 lists the streams or stream segments that would be affected by proposals in this environmental impact statement and shows existing condition and trend. Aquatic condition is based on the numerical rating system used for the inventory. Trend is based on the fishery biologists' judgments and evaluations made from the inventory narratives.

Table 4-8. Affected Streams and Lakes

Number[1]	Name	Aquatic Condition Rating[2]	Trend[3]
1	Cedar Creek	.....	D
2	Rock Creek	71	S
3	Egeria Creek	87	S
4	Deep Creek	67	S
5	Cabin Creek	61	D-S
6	Sunnyside Creek	62	S-D
7	Willow Creek	29	I
8	Hack Lake	Good	S
9	Sheep Creek, West Fork	46	S
10	Sheep Creek	54	S
11	Sweetwater Creek	85	S
12	Derby Creek	58	S
13	Horse Lake	Good	S
14	Red Dirt Creek	32	S
15	Upper Colorado River	.....	S
16	Piney River	98	S
17	Castle Creek	43	I-S
18	Edges Lake	Fair	D
19	Catamount Creek	54	S
20	Norman Creek	61	D
21	Eagle River	89	S
22	Frost Creek*	73	S
23	Salt Creek	72	D-S
24	Cottonwood Creek	60	D

Table 4-8. Affected Streams and Lakes—Continued

Number[1]	Name	Aquatic Condition Rating[2]	Trend[3]
25	Abrams Creek	43	S
26	Prince Creek	88	I
27	Thompson Creek	80	S
28	Thomas Creek	90	D-S
29	Crystal River	85	S
30	Sopris Creek West	80	I-S
31	Sopris Creek East	59	S
32	Snowmass Creek	69	S
33	Red Canyon Creek*	73	S
34	Fryingpan River	87	S
35	Coulter Creek West*	46	S-D
36	Cattle Creek	65	S-D
37	Fourmile Creek	70	S
38	Thompson Creek North	59	S
39	Threemile Creek	56	S
40	Roaring Fork River	82	S
41	Mesa Creek*	66	D
42	Mitchell Creek	78	S
43	Colorado River	.....	S-D
44	Rifle Creek	100	S
45	Elk Creek Main	68	S
46	Harris Gulch	.....	S
47	Butler Creek	59	S
48	Rifle Creek Middle	72	S
49	George Creek	80	D-S
50	Rifle Creek East	98	S
51	Piceance Creek	56	S
52	Harris Reservoir	Good	I-S
53	Elk Creek East	81	S
54	Keyser Creek	106	S
55	Dry Possum Creek*	77	S
56	Canyon Creek East	90	S
57	Possum Creek	76	S
58	Canyon Creek	52	S
59	Colorado River	.....	S
60	Wallace Creek North	71	S
61	Wallace Creek	93	S
62	Battlement Creek	83	S
63	Cache Creek	66	S
64	Baldy Creek*	55	I
65	Garfield Creek	53	D
66	Second Anvil Creek	.....	D
67	Parachute Creek, East Middle Fork	.....	D-S
68	Northwater Creek	.....	D-S
69	Parachute Creek, East Fork	.....	D-S
70	Trapper Creek	.....	D
71	Fravert Reservoir	Fair	I
72	JQS Gulch	.....	D-S
73	First Water Gulch	.....	D-S
74	First Anvil Creek	.....	D-S
75	Lower Colorado River	.....	D-S

[1]This number corresponds to the number shown on Map 3-5.
[2]Rating: 113 to 94=excellent; 94 to 98=above average; 78 to 62=average; 62 to 46=below average; below 46=poor
[3]Trend: I=increasing; D=decreasing; S=stable
*These streams have potential as a fishery but presently do not support a fish population.

TERRESTRIAL WILDLIFE

Habitat and Related Species

Wildlife habitat in the resource area provides food, cover, water, and living space for a diversity of wildlife species. Land developers, oil companies, recreationists, water users, ranchers, and farmers are competing with wildlife for use of this habitat. This competition is expected to accelerate in the future as the nation's population grows and the demand for more energy and recreational facilities increases, thus wildlife habitat on public land will continue to increase in importance.

Wildlife species are generally associated with one or more specific types of habitat. Therefore, in this final environmental impact statement, wildlife habitat has been divided into five generalized groupings—grassland, broadleaf tree-riparian, mountain shrub, semi-desert shrub, and conifer (forest and woodland). The Resource Area Profile lists wildlife species associated with these various habitat types. The Existing Management Situation discusses the most important wildlife species found in the resource area and their population and habitat conditions. Maps and overlays associated with the Existing Management Situation display seasonal use areas for many of these species. These documents are on file and available for review in the Glenwood Springs Resource Area office.

Grassland

The grassland habitat makes up only a small percentage of the public land acreage in the resource area. It provides spring and summer food for deer and elk, and food or cover for many small game and nongame species such as sagebrush vole, coyote, sage grouse, blue grouse, mountain bluebird, and various raptors.

Broadleaf Tree-Riparian

Aspen stands (7 percent of the resource area) and riparian-related species such as cottonwood, willow, grass and forb (less than 1 percent of the resource area) make up this habitat type.

Aspen stands provide food and cover for deer, elk, and many small and nongame animals and food and nesting habitat for various birds. Riparian-related vegetation provides essential food, cover, and nesting habitat for many aquatic and semi-aquatic wildlife species such as the bald eagle, great blue heron, beaver, and various waterfowl as

well as other nongame species, especially songbirds. It also provides food and cover for big game. Although insignificant in overall acreage, it is used by about 272 or 75 percent of the wildlife species thought to occur in the resource area at some time during their life cycle.

In this resource area, most of the riparian habitat occurs on private land along the major rivers and their tributaries. The most important riparian habitat occurs on public land along the Colorado River from Glenwood Springs west to the resource area boundary. Throughout the resource area, riparian habitat has been severely impacted by road construction, gravel extraction, water diversions, and livestock grazing. Proposed water impoundments may have significant impacts in the future.

Mountain Brush

The mountain brush community, composed primarily of oakbrush and service berry, occurs on about 20 percent of the public land in the resource area. It is important as winter range for elk and mule deer and also is used by mountain lion, black bear, wild turkey, and band-tailed pigeon as well as many nongame species, especially songbirds. This habitat type is currently being lost to housing development.

Semi-Desert Shrub

The semi-desert shrub community is composed of sagebrush, greasewood, and saltbush. Sagebrush occurs on 27 percent of the public land in the resource area, but greasewood and saltbush are relatively insignificant in amount.

Sage grouse and sage and Brewer's sparrows are almost completely dependent upon sagebrush, while mule deer and elk depend on it for food, especially during the winter months. Sage grouse are found primarily in the Castle Peak and King Mountain Capability Units with fewer occurrences in the Eagle-Vail Capability Unit. Other wildlife species commonly associated with sagebrush are the cottontail rabbit, coyote, bobcat, and sagebrush vole. Presently, the major activity causing the loss of sagebrush is housing development.

Conifer

The conifer community is made up of two distinct habitat types—conifer forest (spruce-fir) and conifer woodland (pinyon-juniper). The conifer forest and conifer woodland make up about 6 percent and 39 percent of the public land in the resource area, respectively. The conifer forest provides thermal and hiding cover and some food during the summer months for deer and elk; it also provides food, cover, and nesting habitat for such species as blue grouse, flammulated owl, northern three-toed woodpecker, Williamson's sapsucker, snowshoe hare, southern red-backed vole, black bear, bobcat, and pika.

The conifer woodland habitat type provides very important winter thermal and hiding cover and food for mule deer and elk and is also extensively used by mountain lion. Other associated species include the band-tailed pigeon, pinyon jay, plain titmouse, bushtit, black-throated gray warbler, desert cottontail, pinyon mouse, and ringtail.

Changes occurring in the conifer habitats include fuelwood cutting, timber harvesting, and pine beetle infestations. In some cases, these changes are beneficial to wildlife. Detrimental changes include housing development.

Big Game

Mule deer and elk are of significant importance to the local economy, therefore, they are discussed separately in this section. Population estimates used in this document are based on Colorado Division of Wildlife population modeling efforts.

Mule Deer

Mule deer populations in the resource area are generally healthy and are estimated at 65,000 animals (5-year average from 1976 to 1980), down from the 1963 estimate of 81,000 animals. The Colorado Division of Wildlife's goal for 1988 is for an estimated 85,000 deer—a 31 percent increase. Loss of crucial habitat and competition with elk, which have increased by an estimated 58 percent in the past 20 years, has contributed to this downward trend. Developments in the upper Eagle and Roaring Fork valleys started in the early 1960s; however, significant population and associated development increases began to occur in the early 1970s.

In the resource area, quality and quantity of winter habitat appear to limit the size of the mule deer herds. Based on browse condition transects established by the BLM in the early 1970s, only about half the available winter range is in satisfactory condition—25 percent in the Garfield Capability Unit, between 50 to 75 percent in the Roaring Fork and Eagle-Vail units, and less than 50 percent in the King Mountain and Castle Peak units.

Of the estimated 1,342 square miles of deer winter range in the resource area, 750 square miles are considered to be crucial to deer (see Map 4-5, DEIS Map Addendum). Of these 750 square miles, 400 (53 percent) are on public land. Based on 1979 county zoning maps, is was estimated that 60 to 83 square miles of the crucial deer winter range on private land (8 to 11 percent of the total) could be lost to development in the next 10 years. Assuming a total development of zoned areas on private land, crucial deer winter range on public land would be required to support 47 percent more mule deer by 1988 to meet Colorado Division of Wildlife goals or 11 percent more to maintain current populations.

In the Castle Peak and Eagle-Vail Capability Units, a major migration route, also classified as crucial winter range, serves an estimated 3,500 mule deer that move from summer range in the Gore Mountain Range to winter range in the Gypsum and Eagle areas.

Elk

Elk populations have increased from 8,200 to 13,000 in the past 20 years—an increase of 58 percent. The Colorado Division of Wildlife goal is to hold this level until 1988.

Of the estimated 993 square miles of elk winter range in the resource area, 435 square miles are crucial to elk (Map 4-5, DEIS Map Addendum). Of these 435 square miles, 200 (46 percent) are on public land. Based on 1979 county zoning maps, it was estimated that 22 to 35 square miles of the privately-owned crucial elk winter range (5 to 8 percent of the total) could be lost to development during the next 10 years. If this happens and current elk populations in the resource area are to be maintained, elk populations on BLM-managed crucial winter range will have to increase by a like amount.

It should be noted that most of the 47 percent of crucial deer winter range and 54 percent of the crucial elk winter range occurring on private land is supplied by the ranching community. This, along with the spring ranges these ranches provide, is crucial to the survival of big game herds and, consequently, to the economic health of the local communities.

Threatened and Endangered Species

The bald eagle and peregrine falcon (presently on state and federal endangered species lists) and the great blue heron (a species of high federal interest) are known to use public land.

The Colorado, Eagle, and Roaring Fork Rivers provide suitable habitat for the bald eagle and the great blue heron. The Colorado River from New Castle west to the resource area boundary provides the most important habitat to these species; however, much of the habitat in this area is being lost to such things as gravel pits, highway construction, and industrial and housing development. The bald eagle and great blue heron are especially vulnerable because ponderosa pine and cottonwood trees that provide the needed nesting, perching, roosting, and hunting sites along the river are often removed during development. These species are also particularly sensitive to human activities.

During the years of 1978-80, a minimum of 35 bald eagles were thought to winter in the resource area. Three historic bald eagle nests are located in the resource area, two of which occur on public land. In 1980, a fourth nest was built on private land east of Rifle and one of the historic nests west of Rifle was reconstructed. The new nest was destroyed by wind and the reconstructed nest was later abandoned. Disturbance from a nearby gravel pit newly reopened for the year could have contributed to the abandonment.

Several isolated sightings of peregrine falcons have been reported in the past; however, no active nests are known at this time. A number of known historic nest sites exist in the resource area, and several potential nesting sites for peregrine falcon introduction have been identified on public land.

Approximately six (15 percent) of the known active heron nest sites in Colorado occur along the Colorado River within the resource area with a majority of this use occurring from New Castle west to the resource area boundary.

LIVESTOCK GRAZING

The Glenwood Springs Resource Area has 253 grazing allotments presently authorized for livestock use. Two hundred eleven allotments have one permittee per allotment, and 42 common-use allotments have 2 or more permittees per allotment. Two allotments are presently managed cooperatively with the U. S. Forest Service. There is potential for several more to be managed in this manner. Three kinds of livestock are authorized to use these allotments. Table F-3, Appendix F (DEIS) shows livestock authorizations for each allotment in the resource area. Table 4-9 shows the number of allotments in each use.

One hundred sixty-eight ranchers are authorized to graze livestock within these allotments. The

Table 4-9. Livestock Use

Kind of Stock	Number of Allotments	Percent of Total
Cattle	205	81
Sheep	29	12
Cattle and Sheep	11	4
Horse	5	2
Cattle and Horse	2	1
Sheep and Horse	1	<1
Total	253	100

average cattle rancher runs approximately 300 cows and the average sheep rancher runs approximately 1,600 sheep on public land during a season. During 1980, a total of 12,022 cattle, 7,843 sheep and 27 horses were authorized to graze in the resource area.

Eight allotment management plans (AMPs) are presently in place in the resource area. One of these, the Horn AMP, covers seven allotments. Table 4-10 shows existing AMPs and allotments.

Table 4-10. Allotment Management Plans

AMP	Allotment Numbers
East Divide	8105
Vulcan	8213
Upper Garfield	8222
J.Q.S.	8908
East Fork	8910
Horn	8601, 8730, 8731, 8732, 8733, 8734, 8735
Trail Gulch	8642
Blowout	8643

Twenty-four established allotments have no licensed livestock use and are currently used only by wildlife. The permittees either relinquished their grazing preference or the BLM cancelled the preference in these unallotted allotments.

Cattle typically graze on public land during the spring (May 15 to June 30) while enroute to the higher elevation national forest land where they graze during the summer (July 1 to September 30). In fall (October 1 to October 30), the cattle are moved back to public land as the livestock operators begin to move back to their private property for the winter season (November 1 to May 14). In several locations such as Castle Peak, Naval Oil Shale Reserve, and those allotments bordering the White River National Forest, cattle graze on public land during the spring, summer, and fall (Table F-3, Appendix F, DEIS).

Sheep typically graze on public land in the spring (March 1 to July 1) while enroute to the national forest's summer range. They are moved in the fall (September) back to either public land, private property or desert rangeland west of the resource area until the following spring. The Naval Oil Shale Reserve supports some summer sheep grazing (Table F-3, Appendix F, DEIS).

A resource area inventory of range sites conducted in 1979 using the Soil Conservation Service's ecological range condition classes (Soil Conservation Service 1976) shows that 9 percent of the rangeland is considered in good condition, 59 percent is in fair condition, and 32 percent is in poor condition (BLM 1979). It should be noted that ecological range condition is a classification system that groups plant communities according to the degree of successional change from the presumed climax plant community. This classification is not necessarily synonymous with a particular use value. For example, fair ecological condition may represent good livestock forage condition (burned area where the brush component is modified to a grass forb component.)

Trend is the direction of change in range condition and indicates whether the range is improving, deteriorating or remaining about the same. Accurate vegetation trend can only be obtained by observing vegetation changes over several years. We do not currently have this data; however, indications are that substantial portions of the resource area are in static and downward trend. Factors contributing to this downward trend are continued heavy use by both livestock and wildlife of preferred plants and control of fire which results in undesirable woody plants such as oakbrush and pinyon-juniper replacing the preferred plants.

A general national decline in the livestock industry and an increase in land values accelerated by rapid development of energy and recreation resources in the resource area have lead to a downward trend in the viability of the local livestock industry. Overall, livestock grazing is not highly important to the local economy but is critical to the livelihood of those operators who actually remain in the livestock business.

VEGETATION

Terrestrial Vegetation

The resource area lies within two physiographic regions—the Southern Rocky Mountains and the

Colorado Plateau. The major physical or biogeographical barriers of the two physiographic regions greatly influence both plant and animal distribution on a regional level. Within a specific area, the types and amounts of vegetation present are determined by precipitation, elevation, topography, exposure, soil type, and man's action. Generally, plant cover and production increase as precipitation and temperatures increase.

Table 4-11 lists the vegetation types and subtypes found in the Glenwood Springs Resource Area. Locations of these vegetation types and subtypes are shown on Map 4-6 (DEIS Map Addendum).

Table 4-11. Vegetation Types and Subtypes of Glenwood Springs Resource Area

Type	Acreage	Subtype
Grass and Grasslike	32,628	Short, mid and tall grass; sedge; and rush
Semi-Desert Shrub	86,526	Black greasewood; winterfat; shadscale; mat, fourwing, and other saltbush; big, low, black and other sagebrush; and rabbitbrush
Mountain Shrub	166,897	Mountain mahogany, bitterbrush, oakbrush, serviceberry, mixed mountain shrub, willows, alder, and other shrubs
Broadleaf Trees	36,042	Willows, red alder, aspen, cottonwood, and other broadleaf
Conifer (Forest)	34,408	Douglas-fir, Engelmann spruce-subalpine fir, and ponderosa and lodgepole pine
Conifer (Woodland)	209,541	Pinyon pine and juniper
Total	566,042	

Source: BLM 1979.

Present forage production is estimated to be 96,666 animal-unit months based on a 1979 inventory.

Riparian Vegetation

Riparian vegetation is found along perennial streams, some intermittent streams, lakes, springs, and reservoirs for all or most of the year. Riparian vegetation occurs in bands or zones along and around these water sources. These areas are often referred to as riparian zones. These zones, in most cases, occur in acreages too small to be delineated separately from the surrounding vegetation type.

Threatened or Endangered Species

Currently, only one plant in the resource area is listed as threatened—the Uinta Basin hookless cactus *Sclerocactus glaucus*. This cactus is found on dry alkaline hills in the Colorado Plateau of western Colorado and eastern Utah. Its range in the resource area is roughly from Rulison west above the Colorado River. No known plant species within the resource area are listed as endangered.

Six plants, currently listed as sensitive, occur in the resource area. These are Barneby's columbine *Aquilegia barnebyi* found near Rifle Falls, sedge fescue *Festuca dasyclada* found on the Roan Plateau, Wetherill's milkvetch *Astragalus wetherillii* found from Rulison west along the Colorado River, phacelia *Phacelia submutica* found south of Debeque, milkvetch *Astragalus lutosus* found northeast of Debeque, and beardtongue *Penstemmon harringtonii* found west of McCoy.

FORESTRY

Commercial Forest Land

The resource area has approximately 45,640 acres of commercial forest land that supports Engelmann spruce-subalpine fir (49 percent), lodgepole pine (38 percent), Douglas-fir (11 percent), and ponderosa pine (2 percent).

Engelmann spruce-subalpine fir is found on cool, moist sites from about 10,000 feet to timberline. This forest type is climax at these higher elevations. Lodgepole pine (found at 8,000 to 10,000 feet elevation) and Douglas-fir (found at 7,000 to 9,000 feet elevation) are typically found interspersed with aspen stands depending on soil type and disturbances. Under natural conditions, Lodgepole pine would be succeeded by the spruce-fir type, while Douglas-fir is considered the climax forest at lower elevations. Ponderosa pine with an elevational range from 6,000 to 8,500 feet is found sparsely grown throughout the resource area.

Overall condition of the forest stands is difficult to summarize. The forest in general can be classed as healthy with the majority of the stands in a mature or overmature condition. Lodgepole pine stands on Hardscrabble Mountain and Bellyache Ridge near Eagle have been infested by the mountain pine beetle. Timber and fuelwood sales are planned to help control this localized beetle population.

Approximately 7,250 acres on Castle Peak and near Hack Lake are the dead spruce type. These areas support old growth spruce stands that were destroyed by the spruce bark beetle from the early 1940s to the early 1950s. The standing, beetle-killed trees have remained relatively sound and are suitable for house logs, large timbers, fuelwood, and pulpwood. Government efforts to control the beetle outbreak on Castle Peak have resulted in numerous roads and trails in the area. No major sales have occurred on Castle Peak or Hack Lake. However, in recent years, the upsurge in fuelwood prices has rekindled interest in the dead spruce resource.

Mature lodgepole stands are found on Black Mountain, King Mountain, and the Seven Hermits area. Logging has occurred since the late 1930s on King Mountain. A timber sale (2.6 million board feet) on Black Mountain was purchased by the Edward Hines Lumber Company in 1981. A cooperative timber sale with the White River National Forest is planned for the Seven Hermits-Hardscrabble area.

No known reforestation backlog exists in the resource area as harvested stands have regenerated, both naturally and through planting.

The timber industry within or near the Glenwood Springs Resource Area has been experiencing some rapid changes in recent years as a result of the depressed housing market, an increase in fuelwood prices, and the availability of large timber supplies. Kaibab Industries' processing facility in Eagle, Colorado, closed in 1980, and the Hines mill in Kremmling, Colorado, has been shut down since 1981. Small sawmills, post and pole outfits, and fuelwood distributors make up the present local industry. Recent indications for the local timber industry point to a resurgence. A large fuelwood processing facility is planned near Sweetwater, Colorado. The operator has received tentative approval from the U. S. Forest Service for contracts removing the dead spruce on the Flat Tops. Louisiana-Pacific has recently purchased three Hines Lumber Company sawmills, including the facility in Kremmling, Colorado.

The present annual allowable harvest on public land is 1.75 million board feet. The White River National Forest allowable cut has averaged about 14.3 million board feet. A demand analysis conducted by the White River National Forest indicates the demand for live timber in late 1981 and 1982 was 16.4 million board feet and the demand for dead timber was 22.0 million board feet (USFS 1983). Local and national trends indicate sawtimber demand will increase in the future.

Timber on public land should not be considered inferior to or less valuable than timber on national forest land. The majority of the commercial species on public land are in a mature condition and in need of harvest. As the demand for sawtimber and fuelwood increases, the value of timber on Castle Peak and other stands of dead sawtimber will increase. This dead sawtimber supply, coupled with an accessible live sawtimber supply, could create an increasingly viable forest management and sales program.

Woodland

The resource area also supports approximately 214,310 acres of pinyon pine (44 percent), juniper (44 percent), aspen (11 percent), and subalpine fir (1 percent) known as woodland. An estimated 75 acres of pinyon pine and juniper are harvested annually. Annual woodland harvest averages 1,000 cords of commercial fuelwood and 800 cords of fuelwood sold under public-use permits.

The pinyon juniper forest, found at elevations ranging from 4,500 to 8,000 feet, is typified by stands of all ages and condition but is generally exemplified by slow-growing mature stands. Black stain root rot has been found in several isolated stands. The western portion of the resource area supports primarily a juniper type with the remaining area being a mixed pinyon-juniper type.

Aspen is found throughout the resource area on a variety of sites, usually above 7,000 feet elevations. Aspen is a fast growing, short-lived species (maturity is realized at 70 years) and an aggressive sprouter from the root system. Because of this, it is considered a pioneer species. On sites suitable for other species, aspen will be replaced in time by one of the more shade-tolerant conifers, such as Engelmann spruce or subalpine fir.

The major forest type on the Naval Oil Shale Reserve is aspen. No major sales have occurred on the Naval Oil Shale Reserve because aspen is a noncommercial species. The aspen on the Naval Oil Shale Reserve is generally in a mature to overmature condition. Silvicultural practices are important in the aspen type, particularly in the overmature decadent stands where harvest is needed to help perpetuate the aspen resource. Harvesting these dying stands results in prolific sprouting from the root system, and the aspen stand rapidly reestablishes itself for another rotation.

A potential use of aspen exists for commercial fuelwood. With the vast supply (231,890 acres and annual harvest of 2,790 cords) and low demand, the market conditions for fuelwood will determine the amount of aspen actually sold. It is assumed that demand for aspen fuelwood will slowly in-

crease, but the annual harvest of 2,790 cords will likely not be realized during the life of this plan.

Uniform subalpine fir stands are found on the Naval Oil Shale Reserve and in isolated stands on Castle Peak. The species possesses low value for sawtimber and, consequently, is considered a woodland species with fuelwood being a potential commercial product. Contribution to local fuelwood markets is presently insignificant. Domestic fuelwood use is locally popular with the majority of fir gathered from national forest land.

Increasing energy costs for home heating have resulted in an increased fuelwood demand for heating in the region. The pinyon juniper resource is a unique local supply of fuelwood, as the BLM is the lone government agency that administers a vast amount of woodlands. The woodlands are found at lower elevations than commercial forest lands. Consequently, the wood cutting and gathering season is longer. Pinyon and juniper are both noted for their high Btu or heat outputs. A portion of the local public and commercial distributors depend on the woodlands for their annual fuelwood needs.

Presently, pinyon pine is favored over juniper as a domestic heating source. If past trends of harvesting only pinyon continue, a juniper monoculture will eventually occur in the future. Woodlands management is necessary to assure a future supply of fuelwood and postwood and also to promote the balanced use of pinyon-juniper products. With the increased demands for commercial and domestic fuelwood, utilization of aspen and sublapine fir will be increasingly important.

Benefits of Forest Management

Forest management can play a significant role in maintaining healthy productive stands. The declining health and vigor of many forest stands, resulting in mortality, decay, and susceptability to insect and disease problems, is a primary reason for forest management. Mortality, decay, insects, and diseases in the forest are a natural occurrence aimed at renewing the forest stands, but this loss of the merchantable timber and fuelwood resources is economically wasteful. The timber industry is needed in the forest to help the managers regulate and improve the health and conditions of the stands, thereby ensuring a forest resource and products supply for the future.

A properly managed forest can benefit the various other resources found in the forest. The majority of present forest stands are mature or overmature. With forest management, a more balanced age class distribution would occur that would include stands of all ages. This balance of age class would benefit most wildlife species. The importance of water in the region is a concern as demand for water increases and the available water supply remains stable. Timber harvest has been shown to increase water yield under certain conditions, particularly in the subalpine coniferous forests through small clearcuts. Fuelwood gathering can help reduce fuel loadings in the forest while providing an alternate heating source for homes. Access roads built for timber sales can increase accessibility to public land for dispersed recreational uses.

RECREATION RESOURCES

The resource area is located in a region noted for its recreational opportunities. The resorts at Aspen and Vail, the eight designated wildernesses, the mountain scenery, excellent fishing, big-game hunting, and floatboating attract visitors from throughout the nation and characterize the region as a destination vacation area. In addition, major transportation corridors such as Interstate 70 allow for transient and spontaneous recreational use. These factors have produced a recreational industry that is the major component of the economy throughout most of the resource area. Demands for recreation are expected to increase, especially if rapid population growth from energy and ski area development in and near the resource area continues.

Distinct differences in the amount and types of recreational use exist between national forest and public lands. Presently, national forest land receives most of the use in the region, especially by nonlocal users, with skiing, hunting, fishing, backpacking, camping, and off-road vehicle driving the activities generating the most use. Public land generally receives less use. However, public land is important in providing floatboating and big-game hunting opportunities and in providing local residents with recreational opportunities close to the population centers of the resource area. The differences in use and use patterns occur largely because (1) some national forest areas such as Aspen and the Maroon Bells are nationally recognized whereas resources on public land are not well known and (2) national forest land is more easily accessible than public land that is scattered and has limited public access.

The activities that generate the most use on public land are floatboating, hunting, fishing, and off-road vehicle driving. Over 91,000 recreation days of floatboating occurred in the region in 1980, primarily on the Colorado and Roaring Fork Rivers

with less recorded on the Eagle and Crystal Rivers. Floatboating is economically important since about 73 percent of the 1980 use was through commercial rafting companies. The upper Colorado River between Pumphouse and Dotsero (partially within the Kremmling Resource Area) is the most important river segment to the BLM because the greatest amount of public land is along this segment. In 1980, this area received the second largest amount of use (44,644 recreation days) of the ten major floatboating rivers in Colorado and generated 19 percent (approximately $4,315,000) of the total whitewater boating expenditures in the state (about half of the expenditures in the region).

Big-game hunting is concentrated on Castle Peak, the Battlements, and the Naval Oil Shale Reserve, with lesser amounts of use occurring in the Hack Lake, Hardscrabble, Horse Mountain, and Divide Creek areas. Almost 41,000 visitor days of use occur annually on public land accounting for about 30 percent of the total expenditures associated with this activity in the area. Deer and elk are the most important species and attract 97 percent of the big-game hunting use.

Annual fishing use is estimated to be about 4,200 visitor days. Over 90 percent of this use is on the Eagle, Roaring Fork, Fryingpan, and upper Colorado Rivers. Of this amount, about half occurs on the upper Colorado River alone.

Information on the amount and extent of off-road vehicle use is difficult to estimate because the use is dispersed and also supplementary to other activities such as hunting. In addition, the majority of snowmobile use on public land is associated with access to higher elevations on national forest land. Combined four-wheel drive, motorcycle, and snowmobile use is estimated at 4,800 visitor-use days per year.

Other activities that have lesser amounts of use directly attributable to public land are camping, nature study and environmental education, and general sightseeing.

Public land in the resource area contains a number of recreationally significant areas and features. Thompson Creek, a proposed natural environment area, contains geological, ecological, and cultural resources that are well suited to environmental education. Deep Creek Canyon is noted for its scenic beauty and also has a significant concentration of caves. The upper Colorado River is the most intensively used area in the resource area and offers a wide variety of activities including floatboating, fishing, camping, picnicking, and sightseeing. Primitive types of recreation including hiking, backpacking, and camping are available in the Hack Lake, Bull Gulch, and Castle Peak areas. Geological features that have significant interpretive potentials include the Dotsero Crater, Sweetwater Fold, the oil shale formation in the Wasatch Formation, and the Grand Hogback.

Two areas have been identified by the state of Colorado's Natural History Program as potential natural areas. The areas are Dotsero Crater and the Eagle Valley Evaporite Formation. Dotsero Crater exhibits a unique example of recent volcanic activity with a large exposed undercore and an associated small lava flow. This area is partly on private land and is currently being mined for scoria under valid mining claims. The Eagle Valley Evaporite Formation is a geologic feature associated with highly eroded gypsum soils and sparse vegetation. It is large in acreage and contains some interesting erosion formations on private land near Interstate 70 north of Gypsum, Colorado.

Past BLM recreation planning methods focused primarily on recreational activities, especially amounts of use and use areas, and on recreational features such as geological sites. The BLM and U. S. Forest Service have adopted a new inventory, evaluation, and management system called the **recreation opportunity spectrum** (ROS). The premise of the ROS is that users demand not only a variety of recreational opportunities but also certain environments or settings in which to recreate. These settings have an influence on the activity, the recreational experience, and the satisfaction that is gained. For example, camping in a campground is totally different from camping in a remote area and would result in a different type of experience. The types of settings that exist in an area result from the physical character of the area, the managerial controls imposed on the visitor, and social interactions that affect the experience. The ROS defines a spectrum of settings ranging from primitive (such as a wilderness) to urban (such as a city park). The supply and demand of both activities and settings must be analyzed to obtain the total picture of recreational opportunities. Existing settings in the resource area and in the White River National Forest have been inventoried and identified. Table 4-12 shows the approximate inventoried acreage of settings both on public and national forest lands. In addition, information collected on visitors' preferences for settings associated with various activities indicates most users desire more primitive settings—those settings that are natural in character, have few management restrictions, and have limited social contacts. However, preferences for some specific activities are nearly equal for settings ranging from primitive to semi-primitive motorized or roaded natural.

Table 4-12. Recreation Opportunity Spectrum Settings

Area	Recreation Opportunity Spectrum Settings (acres)					
	Primitive	Semi-primitive Non-motorized	Semi-primitive Motorized	Roaded Natural	Semi-urban[1]	Urban
Public Land						
Garfield Capability Unit	0	11,096	106,886	108,192	11,561	174
Roaring Fork Capability Unit	0	3,709	27,411	24,579	8,178	372
Eagle-Vail Capability Unit	0	0	47,750	10,153	6,144	101
King Mountain Capability Unit	722	3,829	52,697	20,633	2,370	0
Castle Peak Capability Unit	0	15,711	79,331	19,751	4,792	0
Subtotal	722	34,345	314,075	183,208	33,045	647
National Forest Land						
White River National Forest	477,330	863,740	500,060	295,490	90,920	45,460
Total	478,052	898,085	814,135	478,698	123,965	46,107

[1]Also called rural

SOCIAL AND ECONOMIC CONDITIONS

Following is a discussion of the general social and economic conditions in the Glenwood Springs Resource Area. Greater detail and more extensive discussion of the area's economy, social setting, and land uses can be found in the Social and Economic section of the Resource Area Profile and the Lands section of the Existing Management Situation. Both documents are on file and available for review in the Glenwood Springs Resource Area office.

Population

The 1980 population of the three-county area (Eagle, Garfield, and Pitkin Counties) was just over 46,000—two and one-half times the 1960 population (Table 4-13). Most of the growth can be attributed to the development of a recreation and tourism industry in the area, particularly the emergence of Vail and Aspen as major ski resorts. Additional growth in recent years has been the result of exploration for and development of energy minerals. In addition to Aspen and Vail, other major population centers are Carbondale, Glenwood Springs, and Rifle.

Table 4-13. Glenwood Springs Resource Area Population

(1960 to 1980)

Place	1960	1970	1980	Percent Increase		
				1960-70	1970-80	1960-80
Eagle County	4,677	7,498	13,320	60	78	182
Garfield County	12,017	14,821	22,514	23	52	87
Pitkin County	2,381	6,185	10,388	160	67	334
Three-county Area Total	19,075	28,504	46,172	49	61	141
Colorado	1,753,947	2,209,596	2,888,834	26	31	65

Source: U. S. Department of Commerce, Bureau of the Census

Resident population figures understate the impact of people on the resource area. Studies in Eagle and Pitkin Counties indicate that the tourist population during the peak of the ski season is 12,000 in the Vail area and 18,000 in Pitkin County. These figures suggest a peak population of approximately 75,000 that must be accommodated by the area's services and facilities.

Ski area development is continuing with the development of the Beaver Creek resort in eastern Eagle County. Other planned developments include

Adam's Rib, south of the town of Eagle, Little Annie and Burnt Mountain in Pitkin County, and the Rifle Ski Area in Garfield County. Oil shale related growth near Parachute until recently was causing rapid population increases between Silt and DeBeque. A new town, Battlement Mesa, was under construction. However, with the demise of the Colony project and several smaller oil shale projects, only the first stage of the Union Oil project is still underway. The future still holds the potential for oil shale projects by Exxon, Chevron, Mobil Oil, and other companies.

Even without development of the planned ski areas or the oil shale projects, population in the three-county area is expected to be 65,000 in the year 2000—a 40 percent increase. If those projects should come to be, the area's population in the year 2000 could be 83,000. The greater part of any additional growth would be near the towns of Eagle and Parachute or Rifle.

Employment and Income

The economy of the Glenwood Springs Resource Area is dominated by businesses that serve the recreation and tourism industry—restaurants, motels, ski areas, and recreation equipment stores. Of the 47 largest employers in the resource area in 1978, 16 were hotels or motels, 13 were restaurants, and 5 were ski areas. Only 4 firms were engaged in manufacturing or commodity production—2 coal companies, a gas production firm, and a sawmill that has since gone out of business. Agriculture represents a small and decreasing portion of the economy.

The economy is also characterized by a strong element of seasonality and a lack of diversity. Total employment in May is often 20 percent less than the January peak. Hunting activity provides some protection against a seasonal decline in the fall between the busier summer and winter seasons.

The retail trade and service industries are the largest employers in the resource area (Fig. 4-2). Together they supplied jobs to 12,701 of the 25,424 employed workers in 1978, just 50 percent. Nationally, only 32 percent of all workers are employed in the retail trade and service sectors. A sign of the economy's lack of diversity is that the next largest categories of employees were the self-employed and government workers. Coal miners make up a significant portion of the work force in the Carbondale/Glenwood Springs area. Oil shale projects employed as many as 3,500 in early 1982. The recent slowdown of several oil shale projects has considerably reduced that figure.

Total personal income in 1980 is estimated at $344.4 million. Distribution by sector mirrors the pattern of employment with one major exception (Fig. 4-3). Almost 21 percent of the area's personal income is from dividends, interest, and rent. This is half again as much as the 14 percent nationally that is derived from these sources.

Livestock Industry

Although livestock production has been replaced as the major economic activity by recreation and tourism, it retains an important role in the area. In addition to the reliance placed on it by ranch families, livestock production gives the area the rural western character that attracts tourists. It is viewed by some residents as an effective buffer between resort areas and energy development areas. Moreover, much of the area's big game population relies on crucial winter range located on ranchland that may be suitable for development. Maintenance of those lands as ranches will assure their continued availability as crucial winter range.

Of the more than 25,000 employed in the resource area in 1978, about 900 (3.5 percent) were employed in agriculture, primarily in ranching, either as proprietors or as hired labor. The number has been declining for some time and can be expected to continue to do so. Services and sales to ranches and ranch employees support employment of another 450 persons, 1.8 percent of the area's total employment.

Income generated directly by ranch ownership and labor amounted to just over $7 million in 1978, 2 percent of the three-county area's total personal income. That $7 million indirectly stimulated another $3.5 million in income throughout the local economy.

Ranching's contribution to local public revenue is of the same magnitude. Agriculture property assessments in the three counties of $12 million amount to 3.3 percent of total assessed value.

Currently, 168 ranch operators hold BLM grazing permits or leases. Their average use of public land forage has been 37,488 animal-unit months (AUMs), which amounts to about 7 percent of their total forage need (Table 4-14).

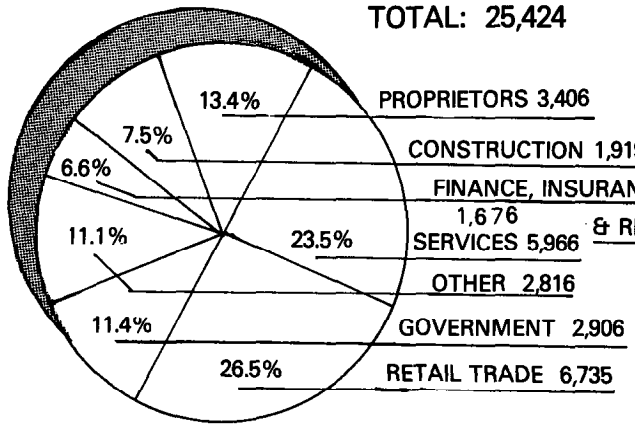
Table 4-14. Dependency on Public Land Forage

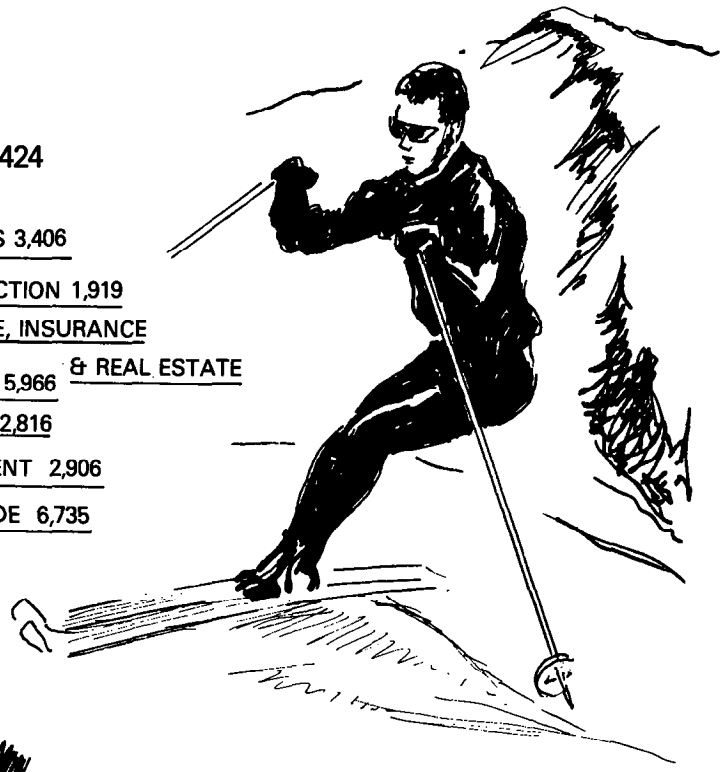
Dependency (percent)	Number of Ranches
0-10	123
11-20	28

FIGURE 4-2

EMPLOYMENT BY SECTOR

TOTAL: 25,424





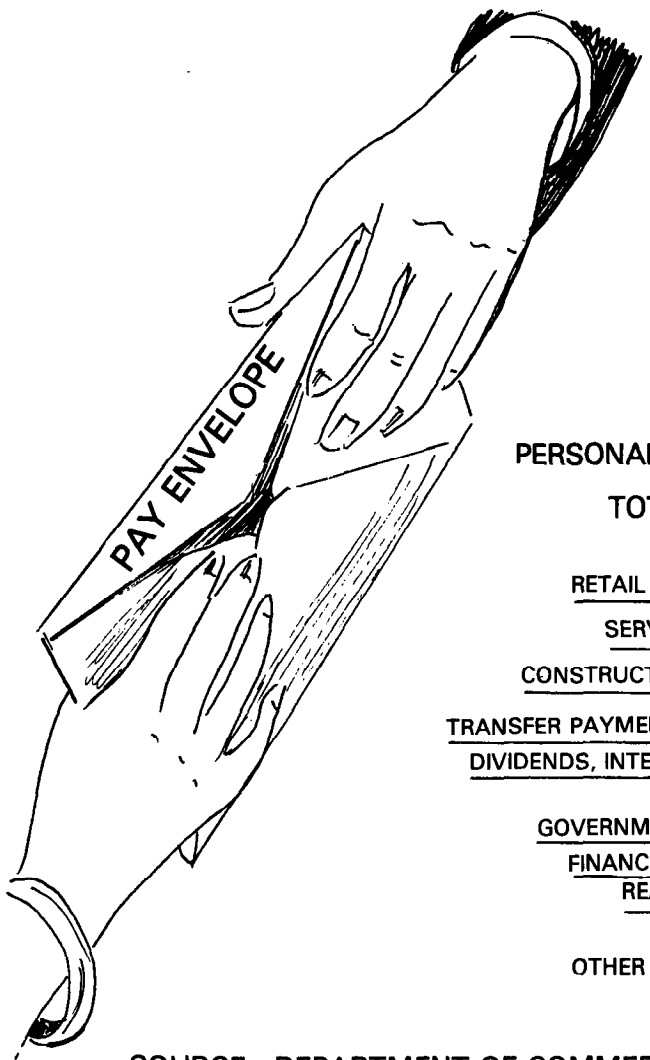
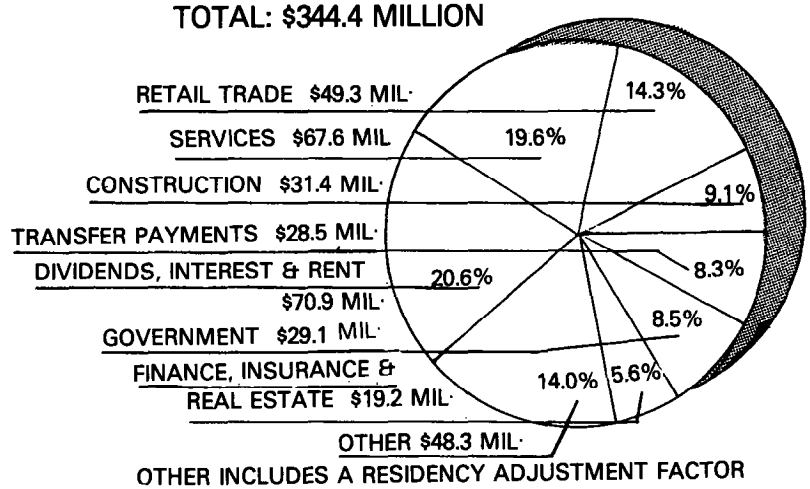


FIGURE 4-3

PERSONAL INCOME BY SOURCE

TOTAL: $344.4 MILLION



OTHER INCLUDES A RESIDENCY ADJUSTMENT FACTOR

SOURCE: DEPARTMENT OF COMMERCE, BUREAU OF ECONOMIC ANALYSIS
REGIONAL ECONOMIC INFORMATION SYSTEM APRIL 1980

Table 4-14. Dependency on Public Land Forage—Continued

Dependency (percent)	Number of Ranches
21-30	7
31-40	6
41-50	1
>50	3
Total	168

More than half of the ranches are relatively small (less than 450 head) with low or negative net revenues (Table 4-15). (The methodology used to evaluate the economic performance of area ranches is described in Appendix J, DEIS.)

Table 4-15. Ranch Size, Public Land Forage and Income

Model	Cattle	Sheep	Number of Ranches	Total BLM AUMs	Average BLM AUM use[1]	Gross Revenue (dollars)		Net Revenue (dollars)	
						Total	Average	Total	Average
I	≤149		68	5,920	87	1,590,452	23,389	−1,075,692	−15,819
II	150-449		47	8,560	182	2,505,617	53,311	−207,082	4,406
III	450-749		14	5,053	361	1,414,336	101,024	345,716	24,694
IV	750-1,999		12	8,598	717	2,788,080	232,340	185,436	15,453
V	≥2,000		2	1,772	886	1,383,934	691,967	509,144	254,572
VI	≤1,399	≤1,749	9	2,828	314	1,335,825	231,252	405,054	45,006
VII	≥1,400	≥1,750	4	1,169	292	925,008	739,734	1,055,132	263,783
VIII		0-6,000	12	3,809	317	8,876,808	148,425	629,628	52,469
Total			168	37,709	224	20,819,951	123,928	1,847,336	10,996

Source: Bartlett, E. T., R. G. Taylor, and J. R. McKean 1979. *Impacts of Federal Grazing on the Economy of Colorado* Fort Collins, Colorado State University.
Note: The methodology used to derive revenue estimates is described in Appendix J (DEIS).
[1]Average 5-year licensed use.

The estimated gross revenue of ranches with permits or leases is $21 million which supports another $10.5 million in sales throughout the area's economy. The estimated net revenue of $1.8 million supports additional local income of about $1.9 million. Total net revenue masks the $1.3 million negative net revenue for the two smallest ranch sizes.

Land Use

The development of private land in the resource area reflects the historic pattern of agricultural settlement and, to a lesser extent, the presence of mineral resources. The primary determinant of the shifting land ownership pattern, from large agricultural land holdings to small residential lots, has been the growth of the commercial recreation industry. The potential for oil shale development has been a major factor in the rapid transition of land use in Garfield County from agricultural use to residential, commercial, and industrial development. Land speculation and housing construction have become major factors in the region's economy. Table 4-16 shows the current private land uses by county within the resource area.

Social Setting

The resource area has traditionally been easily divided into two sections based upon the type of growth and development occurring in each section. The eastern section, made of up Eagle, Pitkin, and that portion of Garfield County including and east of Glenwood Springs, has been dominated by the establishment of a ski and tourism industry. The western section, made up of the remainder of Garfield County, owes its growth mostly to energy mineral development (coal and oil shale). The social environment in each section has therefore been significantly different.

The recreation industry in the eastern section emerged and developed over some 30 years, allowing for planned growth and sufficient time for

Table 4-16. Land Uses in the Glenwood Springs Resource Area

(in acres)

County	Public Land	Private Land				Total
		Residential[1]	Industrial/ Commercial[2]	Agricultural (Intensive)[3]	Grazing	
Garfield	274,120	42,094	11,026	61,002	285,763	674,005
Eagle	229,279	29,698	11,815	20,564	106,230	397,586
Pitkin	26,867	21,055	13,786	9,726	28,825	100,259
Routt	27,227	0	120	8,231	51,614	87,192
Mesa	8,229	0	0	2,560	8,716	19,505
Rio Blanco	320	0	0	0	639	959
Total	566,042	92,847	36,747	102,083	481,787	1,279,506

[1]Includes all plotted subdivisions, approved and unapproved.
[2]Includes all commercial recreation sites.
[3]Includes irrigated pastureland, meadowland, and irrigated and non-irrigated cropland.

the social structure to adapt to changes in the economic and social/political environment of the society. Long-time residents had the opportunity to adjust to changes gradually. Even with the dramatic increase in the number of ski areas and other recreational activity uses in the area over the past 15 years, social change was manageable because it was predictable and residents felt secure in their ability to adapt to changes.

The social environment that emerged in the western section as a consequence of the mineral development there is typical of all energy boom areas. Social changes occurred very rapidly, allowing little or no time for residents or communities to respond. Impacts on social institutions (economy, political structure, social hierarchy), social services, and community facilities happened so suddenly little planning or adaptation was possible. Both communities and residents had to reformulate their social positions after changes had occurred. This type of social change is much more difficult to accept socially and psychologically because of its demand for immediate readjustment. The recent slow down and closure of several energy development projects in this area, while creating an economic slump and financial difficulties for local residents, will provide time for more comprehensive planning of future developments.

Aside from the absolute number of new people moving in at any one time, another factor that has greatly affected the character of the two sections in the resource area is the type of people who were attracted by the two distinct industries. The ski industry, until recently, has been a hobby of the very wealthy whereas mine construction crews have tended to be blue collar in origin. The mixture of these two groups of people along with the long-time, small-town, rural residents has resulted in a comfortable blend of old, traditional values and standards with more urban expectations and tastes. The end result is that the resource area has a much more cosmopolitan flavor than one would expect in an area so geographically isolated.

The factors that contribute to the quality of life and social well-being of the area are the abundance and variety of recreational opportunities available, the outstanding visual quality of the area, the potential for acquiring seasonal employment, and the rural, open-space character of the area. Although the growth of the area and transition of the society from traditional rural to a more politically liberal and urban continues, the importance of the above factors along with ranching, its lifestyle, and associated value system should not be underestimated. These variables underlie the characteristic charm and allure of the area.

CULTURAL RESOURCES

Archaeological Resources

Two percent (27,495 acres) of public land in the Glenwood Springs Resource Area has been inventoried for cultural resource occurrence. To date, about 500 sites have been recorded. Thirty-four of these sites appear to be eligible for listing in the *National Register of Historic Places*.

Of the 491 recorded sites, 88 are high priority, 112 are moderate priority, and 235 are low priority sites. These priorities determine how a site should be managed. Site priorities indicate a site's potential for contributing data and explain its function or uniqueness.

Types of sites that have been located include lithic scatters, hunting sites, kill/butchering sites, hunting racks, quarry sites, temporary camps, extended camps, pit houses, wikiups, granaries, cists, process areas, burial sites, petroglyph-pictograph panels, trails, race tracks, vapor caves, and isolated artifacts.

These resources were used during the past 10,000 to 15,000 years by peoples of the Paleo-Indian stage, Desert Archaic and Fremont cultures, and the Ute Indians.

Historic Resources

Two hundred twenty-five (225) historic sites have been recorded within the resource area. However, only 82 sites, none of which are eligible for inclusion in the register, are located on public land.

Trails, forts, toll and wagon roads, hotels, resorts, bridges, homesteads, ranches, railroads, towns, mines, mills, and schools are the types of sites that have been recorded. These sites are associated with farming, ranching, mining, commerce, and exploration activities that occurred between the 19th and 20th centuries.

PALEONTOLOGICAL RESOURCES

Fossils occur in many geologic formations throughout the resource area. These formations have been classified to indicate the likelihood of significant (vertebrate fossils of scientific interest) fossil occurrence.

Class I. Areas that are known or are likely to produce abundant significant fossils that are vulnerable to surface-disturbing activities.

Class II. Areas that show evidence of fossils but are unlikely to produce abundant significant fossils.

Class III. Areas that are unlikely to produce fossils.

These classifications determine the procedures to be followed prior to the granting of a paleontological clearance to proceed with a project. Class I areas require a BLM survey prior to surface disturbance. Class II and Class III areas do not require surveys; however, mitigation measures are taken to protect any significant fossil finds.

The Wasatch Formation is the only Class I area in the resource area. It covers about 80,800 acres of outcrops in the Garfield Capability Unit. The Wasatch Formation is important because it is one of the few known geologic formations within west central Colorado where abundant vertebrate fossils are exposed on or near the earth's surface. Here fossils unique to the Rocky Mountain Region are exposed in five faunal zones within 5,500 feet of sediment. These fossils are scientifically important because the specimens occur as isolated fragments, rarely as whole skeletons, and, therefore, represent a very small population of a given taxonomic group. To recognize a species, more than one specimen is necessary for identification. The large sample size is necessary to determine the amount of natural variation within a species. To date, approximately 400 specimens representing 40 taxa have been found in each faunal zone. Most of the specimens are fragments (teeth, jaws, partial skulls, and limb bones) of early vertebrates. These specimens range from large (9 feet) hoofed carnivorous mammals to small reptiles. Among the species are small early horses, rhinoceroses, birds, rare primates, and crocodiles.

WILDERNESS VALUES

In the BLM's intensive wilderness inventory, completed in November 1980, four units in the resource area were found to possess wilderness characteristics and were identified as wilderness study areas (WSAs). These areas were Eagle Mountain (CO-070-392), Hack Lake (CO-070-425), Bull Gulch (CO-070-430), and Castle Peak (CO-070-433). The decision to identify Castle Peak and not to identify Pisgah Mountain (CO-070-421) as a WSA was protested and subsequently appealed to the Interior Board of Land Appeals. In a ruling on November 17, 1981, the Interior Board of Land Appeals affirmed the BLM's decision on both units.

On December 30, 1982, an amendment of wilderness inventory decisions eliminated the WSA status of Eagle Mountain and Hack Lake because they are less than 5,000 acres in size. The amendment also eliminated 636 acres of Bull Gulch because it is split-estate land (federal surface—nonfederal subsurface ownership) and does not qualify for wilderness study under Section 603 of the *Federal Land Policy and Management Act of 1976* (FLPMA)). However, this amendment stated that, when authorized by the BLM State Director, affected areas would be considered for other forms of protective management including wilderness consideration under Section 202 of FLPMA. Thus, the original four WSAs in the resource area are still under consideration for wilderness designation.

Section 603 of FLPMA mandated protection of WSAs until Congress makes its decisions on the

areas. Current BLM policy is to similarly protect areas being considered for wilderness designation under Section 202 of FLPMA.

The Eagle Mountain WSA (approximately 330 acres) is located northwest of Snowmass Village in Pitkin County. It is too small to be considered for wilderness designation by itself but could be added to the adjacent Maroon Bells-Snowmass Wilderness (174,329 acres) administered by the White River National Forest. The Eagle Mountain WSA possesses a high degree of naturalness but does not offer outstanding opportunities for solitude or primitive and unconfined recreation by itself. It is, however, a logical extension of the Maroon Bells-Snowmass Wilderness and, thus, shares the very high quality opportunities for both values present in the existing wilderness.

The Hack Lake WSA (approximately 3,360 acres) is located in Eagle and Garfield Counties about 15 miles northeast of Dotsero. It also is too small to be considered for wilderness by itself but could be added to the Flat Tops Wilderness, also administered by the White River National Forest. A few minor imprints of man exist within the WSA; however, a primeval character has been retained. The outstanding opportunities for solitude, primitive, and unconfined recreation available within the the Hack Lake WSA are further enhanced by the opportunities provided in the adjoining 235,230 acres of existing wilderness. Hack Lake contains several special features, including wildlife, scenic, geological, ecological, and cultural values.

The Bull Gulch WSA (approximately 14,364 acres) is located along the Colorado River between Dotsero and McCoy in Eagle County. Only minor modifications of man that have a negligible influence on the overall high quality of naturalness exist within the Bull Gulch WSA. The vegetation and steep, rugged topography provide numerous opportunities for isolation and seclusion. Interesting geological formations, diverse terrain, a wide range of wildlife, and extreme ecological transition contribute to many high quality recreational opportunities and also provide supplemental values. This WSA is the only area with wilderness potential in the resource area that contains a landform/ecosystem type different from that in the existing wildernesses in the local region.

The Castle Peak WSA (approximately 11,940 acres) is located about 10 miles north of Eagle in Eagle County. Because of the distribution and screening of imprints of man, a visitor will perceive the Castle Peak WSA as being primarily natural but will be reminded that man is a frequent visitor. The dense forest that covers much of the WSA and the topography are barriers to sights and sounds inside and outside of the area. The diverse terrain and vegetation, numerous wildlife, the trail network, and geological and scenic features provide for a wide variety of recreational activities. The scenic and ecological features are supplemental values and include Castle Peak—the most prominent geologic feature in the WSA and the Eagle River Valley.

The study phase of the BLM's wilderness review process for these four WSAs is being accomplished through the resource management plan environmental impact statement process. This study evaluates the wilderness values along with other resource values to determine the most appropriate management and use of each WSA. After completion of the resource management plan, the preliminary recommendations on the suitability or nonsuitability of each WSA for designation as wilderness will be compiled in a study report and submitted to the President and to Congress. Congress will make the final decision as to whether or not each WSA will be designated as wilderness.

Existing designated wildernesses in Colorado consist of 2,676,540 acres in 27 areas. Eight of these wildernesses totaling 997,824 acres are in close proximity of the Glenwood Springs Resource Area. These existing wildernesses are expected to reach their recreational carrying capacities sometime between the years 2000 and 2010 according to local and state-wide estimates.

VISUAL RESOURCES

Visual resources are the combinations of landform, water, color, cultural, vegetative, and other features that characterize landscapes. To determine how the visual resources should be managed, the visual resource management program has been developed as a system for classifying and managing landscapes. This system, explained in BLM Manual 8400, places landscape units into visual resource management classes that indicate the overall significance of the visual environment and establish management objectives for determining the degree of acceptable visual change within a landscape (the classes are defined in the Glossary). The management objectives for an area are used to evaluate the visual compatibility of a proposed project and to determine if mitigation measures are needed to reduce or eliminate visual impacts. Existing visual resource management classes have been identified within the resource area and are shown on Map 3-29 (DEIS Map Addendum). Table 4-17 shows the approximate acreage of public land in the existing classes by capability unit. These classes will have to be analyzed and adopted through the resource management plan.

Table 4-17. Existing Visual Resource Management Classes

(in acres)

Capability Unit	Tentative Visual Resource Management Classes				
	Class I (preservation)	Class II (retention)	Class III (partial retention)	Class IV (modification)	Class V (rehabilitation)
Garfield	0	98,691	49,702	87,752	1,664
Roaring Fork	0	43,882	11,758	8,609	0
Eagle-Vail	0	30,534	19,822	13,792	0
King Mountain	0	49,354	13,081	17,816	0
Castle Peak	0	60,630	11,599	47,356	0
Total	0	283,091	105,962	175,325	1,664

Three major visual components are inventoried and evaluated in the determination of visual resource management classes: scenic quality, visual sensitivity, and distance zones.

Scenic Quality

Scenic quality is defined as the degree of harmony, contrast, and variety that influences the overall impression of a landscape. The resource area contains a number of high quality scenic areas. Six areas—the Naval Oil Shale Reserve, Thompson Creek, Glenwood Canyon, Deep Creek Canyon, the Colorado River between State Bridge and Dotsero, and Bull Gulch—have exceptional visual value because of visual variety and harmony. Furthermore, the Thompson Creek, Deep Creek, and Bull Gulch areas contain scenic features that are relatively unique or rare within the physiographic region and qualify for consideration as areas of critical environmental concern for scenic values.

Cultural modifications can affect scenic quality by either complementing or detracting from the visual quality of a landscape. Of greatest concern are those modifications that have depreciated scenic quality such as power transmission lines, gravel pits, mines and associated developments, communication sites, off-road vehicle use areas, and dump sites. The visual impact of some of these modifications could be reduced through rehabilitation, but land ownership or the extent of some impacts precludes complete mitigation throughout the resource area.

Visual Sensitivity

Visual sensitivity is the degree of public concern toward scenic quality and toward existing or proposed visual change within a landscape. Sensitivity levels within the resource area are higher than what might normally be expected because of the comparatively high concern most public land users place upon the visual resources; the large volumes of traffic on Interstate 70 and Colorado Highways 13, 82, 131, and 133; and the amount of tourism, including the destination resorts at Aspen and Vail. The Colorado, Eagle, Fryingpan, Roaring Fork, and Crystal River Valleys, Rifle Gap and Harvey Gap Reservoirs, the Battlements, and the Roan Cliffs are included in the high sensitivity category.

Distance Zones

Distance zones refer to the distance from an observer to a landscape. This distance affects the observer's ability to detect individual landscape elements and changes. Because of the number of travel routes and use areas, much of the resource area is visually accessible, with a large percentage of these visible areas in the foreground/middleground distance zone. Since areas that are closer have a greater effect on the observer, these areas require the most attention in analyzing and mitigating visual impacts.

Summary

The combined effects of scenic quality, sensitivity, and visual accessibility in the resource area have resulted in a high percentage of existing visual resource management classes with low tolerances for modification. Increasing pressure is being placed on the visual resources as a result of energy-related projects (and other developments) and the housing, utilities, and transportation needs associated with them. Yet, public concern is also

increasing about protecting visual quality for open space and scenic backgrounds for residential purposes and for recreational uses.

TRANSPORTATION

Roads

Travel along roads on public land is limited by road conditions and legal access. This situation makes travel across public land difficult for local residents and very difficult for visitors.

Approximately 830 miles of road are located on public land within the resource area. Of this total, approximately 26 miles are state and federal highways that would not be significantly affected by this environmental impact statement, 120 miles are claimed by counties, and 684 miles are BLM roads. Many of the roads on public land are accessible only by private roads crossing private land, and many of these private roads are closed to the public.

Most roads on public land are passable only during dry weather conditions. Of the 804 miles of BLM and county roads inventoried on public land, 508 miles are four-wheel drive roads, 240 miles require a high clearance vehicle, 36 miles are impassable, and 20 miles are suitable for passenger car. Very few roads across public land are regularly maintained.

Large areas of land north of Eagle and along the upper Colorado River between Dotsero and State Bridge are legally inaccessible to the public. Other important large areas of land without assured public access lie south of Gypsum, within the Roaring Fork Valley, adjacent to Battlement Mesa, and north of Silt and New Castle. In most of these areas, lack of public access also prohibits travel through public land to national forest land. Recently, several county roads have been successfully closed to the public by private landowners near major development areas. This trend is likely to continue.

Adequate public access is available to public land near Rifle Gap Reservoir, Gibson Gulch south of Silt, Dry Lake north of Gypsum, and the Naval Oil Shale Reserve.

Ways and Trails

Numerous ways and trails exist on public land. Presently, no trails are maintained, and most are inaccessible for public use.

CHAPTER 5

ENVIRONMENTAL CONSEQUENCES

CHAPTER 5

ENVIRONMENTAL CONSEQUENCES

INTRODUCTION

Chapter 5 discloses the physical, biological, social, and economic consequences of implementing the Proposed Plan described in Chapter 3. It discusses only the resources that would be impacted. No impacts on geology, topography, noise, and prime and unique farmlands would result from management actions. A comparative analysis of impacts by resource program is included at the end of Chapter 3.

ASSUMPTIONS AND GUIDELINES

For the purpose of analyzing the impacts of implementing the Proposed Resource Management Plan, the following assumptions were made. Please note that assumptions were not made for all resource programs.

Water Quality Assumptions

1. In order to derive a sediment yield estimate, it was assumed that the amount of each vegetation type actually treated by the terrestrial habitat and livestock grazing management programs would be equal to the proportion of the total acreage of each vegetation type within an allotment that is suitable for treatment.
2. No more than 10 percent or 40 acres (whichever is greater) of the vegetation proposed for treatment by the terrestrial habitat and livestock grazing management programs would be treated in a particular watershed in a given year.
3. No more than 10 percent of the aspen acreage suitable for treatment in an individual stand (not to exceed 40 acres) would be treated in a given year, and no more than 315 acres would be treated on a resource area wide basis in any given year. This applies to aspen stands greater than 10 acres in size.
4. Implementation of all terrestrial habitat and livestock grazing management vegetation manipulations would take place over a 20-year period.
5. Recreational use in wilderness areas would increase.
6. To assess the significance of sediment impacts, the Northwest Colorado Council of Governments' 208 Plan recommendation for maximum allowable departures of stream suspended sediments was used. This is based on administrative criteria proposed by the U. S. Forest Service (Rosgen et. al. 1977). The allowable departures in sediment yield were 25 percent for third and fourth order streams and 20 percent for fifth order streams. These departure levels apply to streams designated by the Colorado Department of Health, Water Quality Control Commission, as Aquatic Class 1 (cold water aquatic life) and Class 2 domestic water (requires treatment). If these departures were exceeded, the impact was considered significant.
7. Sediment yield is derived from sheet erosion and channel erosion. Channel erosion is generally a large source of sediment but is difficult to estimate. The analysis in this environmental impact statement is based on changes in sediment from sheet erosion only. These figures should be interpreted as indicating general magnitudes of impacts and as a basis of comparison between alternatives rather than as specific changes in sediment yield. Appendix H (DEIS) details the methodology used in generating sediment yield figures.
8. It was assumed that water rights necessary for the construction of projects could be acquired.

Water Yield Assumptions

1. Commercial forest land water yield analysis is based on an average harvest volume of 6,700 board feet per acre of timber per year.
2. The terrestrial habitat and livestock grazing management mountain brush manipulations assume that the proportion of mountain brush actually manipulated in an allotment and watershed is the same as the percentage of total mountain brush suitable for manipulation in an allotment and watershed.
3. The aspen water yield analysis is based on an assumption that a maximum of 315 acres

would be harvested in any one year. It is also based on an average increase of 3 inches over an estimated life of 5 years for the clearcuts.

4. Estimates for increases in water yield expected from the various vegetation types represent average increases expected in years of normal precipitation. Actual increases would vary by site condition and precipitation level.

Critical Watershed Assumption

Stipulations protecting critical watersheds from mineral exploration and development impacts would be included in mineral leases.

Water Rights Assumption

BLM is currently in the process of identifying all water sources on public land which qualify as public water reserves pursuant to the Executive Order of April 17, 1926. The quantity of water reserved is that necessary to meet livestock and human uses. Water needed to support BLM programs in excess of these needs would be applied for through the Colorado State appropriation system on a case-by-case basis.

Minerals Assumptions

1. All mineral rights would be reserved on land identified for disposal where valuable minerals can be identified.
2. Conflicts between mineral resources (i.e., oil and gas versus coal) would be resolved on a case-by-case basis as they occur.

Aquatic Wildlife Assumptions

1. Significant increases in sediment yield would adversely affect fisheries.
2. Upstream diversions would not dewater the streams upon which the aquatic wildlife rely or adequate water rights would be acquired to protect the fisheries resource.
3. Vegetation regrowth would be controlled in oakbrush and sagebrush treatment areas to maintain water yield increases.
4. The condition of the riparian zone influences the quality of the aquatic environment.

Terrestrial Wildlife Assumptions

1. Wildlife introductions, reintroductions, and supplementations are all discussed as introductions.
2. Wildlife (mule deer and elk) existing use was based on the average of the 5-year period 1976-80.
3. No more than 10 percent or 40 acres (whichever is greater) of the areas proposed for vegetation manipulation within a watershed would be manipulated in any given year by the terrestrial habitat or livestock grazing management programs.
4. All pinyon-juniper woodland occurs in big game winter range with the majority occurring in crucial winter range.
5. All commercial forest land occurs in big game summer range.
6. Selective cutting would result in removal of 40 percent of the trees in a stand.
7. Loss of any crucial winter range causes a proportionate reduction in big game populations.
8. Colorado Division of Wildlife computerized population modeling program and base input data are correct.
9. No more than 10 percent of the aspen acreage suitable for treatment in an individual stand (not to exceed 40 acres) would be treated in a given year, and no more than 315 acres would be treated on a resource area wide basis in any given year. This applies to aspen stands greater than 10 acres in size.
10. Roads would be avoided along major ridgelines, on straight stretches over ¼ mile in length, in elk calving areas, in meadows, and in other natural forest openings.
11. Specific harvest operations would be carried out in the shortest time and disturb the least amount of area possible.
12. BLM computerized forage allocation program and base input data are correct.
13. Long-term impacts would occur over a 10-year period. Short-term impacts would occur within a 5-year period.
14. The Colorado Division of Wildlife can successfully control big game populations on a game management unit basis.
15. All vegetation manipulation acreage proposed for the resource area could be accomplished within visual resource management guidelines.

16. All land identified for disposal would lose its value as habitat for big game. Disposals would occur over a 10-year period.
17. Commercial forest land would be harvested on a 90- to 120-year rotation; pinyon-juniper woodland, on a 230-year rotation; and aspen woodland, on a 70-year rotation.
18. Some big game crucial winter range on private land would be lost. This loss would increase the big game forage demand on public land by approximately 6 percent over the next ten years if total big game populations are to be maintained.
19. Short-term area-wide impacts were considered significant if forage fell 5 percent or more short of meeting existing big game population needs.
20. Long-term area-wide impacts from land tenure adjustments were considered significant if adjustments resulted in big game crucial winter range losses of 5 percent or more.

Livestock Grazing Assumptions

1. Assessment of vegetation-related impacts were based on expectations of near normal annual climate. Severe climate variations could drastically alter vegetation responses.
2. Vegetation manipulations would be implemented over a 20-year period.
3. All vegetation manipulation acreage proposed for allotments could be accomplished within visual resource management objectives.
4. No more than 10 percent or 40 acres (whichever is greater) of the areas proposed for vegetation manipulation within a watershed could be manipulated in any given year by the terrestrial habitat or livestock grazing management programs.
5. Implementation of actions would be monitored and evaluated to adjust management as necessary based on increased data availability.
6. Livestock operators would have up to 5 years to adjust their ranching operations to coincide with any adjusted livestock use. Final levels of grazing use would be based on forage use studies, actual use reports, climate, and, possibly, apparent trend (see Chap. 3, Description of the Proposed Plan, Livestock Grazing Management).
7. The difference between projected and initial allocations was based on forage increases from vegetation manipulation projects by various resources. Additional forage realized by fuelwood cutting, for instance, with forage accruing to livestock, would reduce the number of acres per allotment manipulated by the livestock grazing program to meet objectives.
8. Water rights could be acquired to support grazing use.

Vegetation Assumptions

1. Near normal annual climate conditions were assumed, as severe variations could drastically alter anticipated vegetation responses.
2. Annual acreages harvested or manipulated were based on annual allowable harvest for forest management and 10 percent or 40 acres (whichever is greater) of the areas within a watershed proposed for terrestrial habitat and livestock grazing management vegetation manipulation projects.
3. No more than 10 percent of the aspen acreage suitable for treatment in an individual stand (not to exceed 40 acres) would be treated in a given year, and no more than 315 acres would be treated on a resource area wide basis in any given year. This applies to aspen stands greater than 10 acres in size.

Forestry Assumption

Impacts of interim management for wilderness study areas were not addressed. The impacts of interim management on forest management exceed those identified, since 18,000 acres of the forest land base would be excluded from management until Congress makes wilderness designation decisions (at least 6 years).

Recreation Resources Assumptions

1. Other than acquisition of legal access to public land, proposed management actions would not significantly affect the amount of visitor use or use trends. Thus, only the impacts of legal access acquisitions on visitor use were discussed. It was further assumed that many changes in use would result from *displacement* of use from other areas in the region. These impacts were discussed in general terms under the assumption that all proposed legal access would be acquired. Because several resource programs have proposed legal access that

would have cumulative impacts on recreation, all such acquisitions were discussed in the Impacts from Transportation Management and Cumulative Impacts on Recreation Resources sections.

2. Management actions or projects that would have short-term impacts (3 to 5 years) exceeding the management objectives for a recreation opportunity spectrum (ROS) class were not considered significant as long as the actions or projects would conform to the management objectives in the long term (5 to 20 years) after implementation.
3. Because of the variety and supply of ROS settings available in the White River National Forest, any proposed class changes on public land would have minimal effect on the supply and variety of classes in the region, assuming the classes in the White River National Forest remain the same or do not change dramatically.
4. Reductions of primitive and semi-primitive nonmotorized ROS classes on public land would have some adverse impacts because inventory information shows an overall high preference for these types of settings. However, the impact would be low because of the large supply of these settings in the region. This preference information also indicates that reductions or increases in other ROS classes cannot be termed as adverse or beneficial as long as sufficient supplies of each class are available to provide a variety of setting opportunities.
5. Changes in ROS classes would affect the settings and thus the recreational experience opportunities available in the areas where the changes occur (see Appendix E, DEIS, for the description of experience opportunities for each class). However, inventory information on setting preferences for the major activities that occur in the affected areas indicates the impacts of the changes on experience opportunities would be insignificant.

Social and Economic Conditions Assumptions

Water Yield

Demand for water would continue to grow and be in excess of water supply throughout the western United States.

Livestock Grazing

1. The initial forage allocations would be verified by a monitoring program.
2. Implementation of forage improvement projects would proceed on schedule with the results indicated by the potential livestock forage allocation numbers.
3. The ranch models used in the economic evaluation of management proposals are accurate representations of actual ranching operations in the resource area (see Appendix J, DEIS).

Terrestrial Wildlife

1. Proposed forage improvement projects would proceed on schedule with the results as indicated by the potential big game forage allocation numbers.
2. During the life of the plan, development of private land in the resource area would reduce crucial deer and elk winter ranges by about 6 percent. Crucial winter range on public land is the only alternative source of forage.
3. In the long term, the forage available for big game on crucial winter range, big game population levels, and the amount of recreational use of big game would all be proportional.
4. Expenditures for wildlife-related recreation would be as specified in the Recreation and Wildlife portions of the Existing Management Situation (on file and available for review in the Glenwood Springs Resource Area office).

Forestry

1. Sufficient regional demand would exist to permit sale and harvest of 3 million board feet of timber from public land each year. An unlimited demand for fuelwood would continue.
2. Through the life of the plan, stumpage values would average $25 per thousand board feet; commercial lumber prices would average $350 per thousand board feet; and commercial fuelwood prices would average $150 per cord for pinyon-juniper and $70 per cord for aspen and subalpine fir.
3. Fuelwood sales would be split evenly between commercial cutters and the public.

Wilderness Values

Because of the small acreage involved, wilderness designation on public land would not significantly affect wilderness visitor use or use trends in the local region. Economic impacts would be unquantifiable.

Land Tenure Management

Disposal of identified tracts of land would be dispersed over the life of the plan if necessary to diffuse adverse economic impacts.

Wilderness Assumptions

1. In determining the suitability of each wilderness study area for wilderness designation, other resource recommendations were analyzed as though the BLM's ***Interim Management Policy and Guidelines for Lands Under Wilderness Review*** were not a factor. However, recommendations that do not conform to the interim management policy would be deferred until a nondesignation decision by Congress releases a wilderness study area or portion thereof from the interim management restrictions.
2. The suitable and nonsuitable recommendations for this resource management plan are preliminary and, therefore, could change during administrative review. These recommendations will become final recommendations only if adopted by the Secretary of the Interior and the President. The impacts were based on the assumptions that the preliminary suitable or nonsuitable recommendations for wilderness study areas would not be changed during the administrative review process and would be adopted by the Secretary of the Interior and the President and that the areas recommended as suitable would be designated as wilderness by Congress.

Visual Resources Assumptions

1. The objectives for each visual resource management (VRM) class describe the degree of modification allowed in the basic elements of the landscape. Any degradation of visual quality within the limits of a particular class was not considered significant.
2. The VRM program is a long-term management tool. Many projects would have short-term visual impacts (3 to 5 years) that might exceed the management objectives for a class. However, these impacts were not considered significant as long as the project would conform to the management objective in the long term (5 to 20 years after implementation).
3. If all, or portions of, the four wilderness study areas are designated as wilderness by Congress, the areas would be managed under VRM Class I objectives. However, until designation occurs, the areas would be managed under the visual resource management objectives identified in the Proposed Plan, and it is the impact of this management that was addressed.
4. Since it is not known where or when rehabilitation may occur, the impacts of rehabilitation were not addressed.

Transportation Assumptions

1. Easement acquisition and road development and improvement would be spread out over a 10- to 20-year period. By spreading out the development of the transportation system, impacts would be minor.
2. Impacts to transportation are limited to direct impacts on maintenance and use.
3. Legal access rights would be reserved when public land is disposed of whenever it is important to retain public access to adjacent state or federal lands.

IMPACTS OF PROPOSED PLAN

Impacts on Air Quality

Impacts from Proposed Management Actions

Short-term localized impacts to air quality would result from mechanical and burning vegetation manipulation practices. These impacts would be small in scale and dispersed throughout the resource area. These factors combined with required management stipulations for vegetation manipulations would reduce the significance of the impacts.

However, increased levels of air pollution are anticipated from regional growth and energy minerals development. Emissions from primary sources

would be minimized through applicable policies, regulations, and statutes.

Cumulative Impacts on Air Quality

Cumulative impacts would be the same as those discussed under Impacts from Proposed Management Actions.

Impacts on Soils

Impacts from Proposed Management Actions

Impacts from Water Quality Management. Proposals for maintaining or improving water quality might benefit soils. For example, measures to reduce sediment could also reduce erosion, and measures to protect riparian areas could also improve soil productivity in those areas. The corrective actions that would be taken are not yet known; consequently, impacts cannot be quantified.

Impacts from Critical Watershed Areas. Minimizing surface disturbance in critical watershed areas would prevent an increase in erosion and would probably protect soil productivity.

Impacts from Minerals Management. Surface disturbance resulting from mine development and operation would cause short-term increases in erosion. Impacts would continue until rehabilitation measures were completed. Road construction would also result in some increase in erosion but should be minimal as roads would be designed and constructed in accordance with BLM road standards.

Impacts from Terrestrial Habitat and Livestock Grazing Management. Implementation of grazing systems would have long-term beneficial impacts on soils. Rest from livestock grazing during critical growing periods would improve plant vigor, reproduction, and litter accumulation and increase the organic matter content in surface soils. This would cause beneficial changes in soil structure, permeability, and potentially the soil's productivity. Impacts from rest-rotation grazing would be greater than from deferred-rotation grazing because in the former system at least one pasture would be rested annually through the entire year whereas in the latter system every pasture would be grazed each year (see Appendix A, DEIS for a description of grazing systems).

Mechanical vegetation manipulation would create localized short-term impacts on the soil resource. Disturbance caused by plowing or discing could increase the surface soil's permeability. The length of time during which measurable increases in permeability would be evident is unknown, but permeability would decrease with time. Soil loss through wind and water erosion would increase until revegetation occurred. Compaction caused by mechanical equipment would be short term and would not be significant.

Burning would cause localized short-term changes in the soil's physical, chemical, and biological properties primarily through the loss of ground cover and litter accumulation. The severity of the impact would depend on the fuel type and the intensity of the fire. Burning might decrease soil infiltration rates in some soils which would result in accelerated erosion and the removal of some nutrients mineralized by the fire. After burning, concentrations of calcium and magnesium might be greater in the surface soils and the water-soluble potassium concentrates might be less. Total nitrogen could be lower in soils of the burned area, which would decrease soil productivity (BLM Grand Junction Grazing EIS 1979). The overall effect on plant production would depend on the initial concentration of these nutrients in the sites selected for burning. These data are not known at present.

Short-term loss of vegetation would increase evaporation rates from the soil (Shown, Lusby, and Branson 1972) resulting in reduced soil moisture content. This would temporarily retard seedling emergence and plant growth. Data are not available to predict the magnitude of these changes.

Soil erosion from wildlife and livestock vegetation manipulations would increase during the short-term. Erosion would be greatest immediately following disturbance and would decline rapidly with the reestablishment of new vegetation. In the long term, erosion probably would be less than current losses because livestock would be more evenly distributed and ground cover would increase. Potential changes in soil erosion caused by chaining, plowing, furrowing, brush beating, spraying, and burning are indicated in Table 5-1 for typical site conditions where treatments would be implemented.

The sediment yield impacts from range and wildlife treatment on approximately 47,000 acres of the three vegetation types mentioned above over a 20-year period are discussed under Impacts on Water Quality.

Impacts from Forest Management. Road construction impacts should be minimized by designing and constructing roads to BLM standards.

The type of cutting practice selected could also affect soil conditions. Clearcutting would result in the greatest increase in soil loss per acre and would also increase the potential for landslides on noncohesive soils. Thinning and selective cutting would leave most of the ground cover intact and

Table 5-1. Potential Soil Loss from Mechanical Treatment and Burning

(in tons per acre per year)

Vegetation Type	Present Erosion		Short-Term Erosion		Long-Term Erosion	
	Mechanical Treatment	Burning Areas	Mechanical Treatment	Burning Areas	Mechanical Treatment	Burning Areas
Sagebrush	2.8	4.2	3.4	15.6	2.1	3.9
Mountain Brush	2.3	3.4	3.2	15.6	1.3	2.8
Pinyon-Juniper	3.4	5.0	3.8	11.7	3.4	5.0

result in minimal soil exposure. Changes in erosion from harvest practices on typical sites in the resource area are indicated in Table 5-2.

Table 5-2. Expected Soil Loss from Timber Harvesting

(in tons per acre per year)

	Present Erosion		Short-Term Erosion		Long-Term Erosion	
	Selective Cut Areas	Clearcut Areas	Selective Cut Areas	Clearcut Areas	Selective Cut Areas	Clearcut Areas
Commercial Forest Land	1.1	1.1	4.5	6.8	1.1	1.1
Woodland						
Pinyon-Juniper	6.8	6.8	11.3	13.2	5.7	5.7
Aspen	.....	1.1	.....	6.8	.....	1.1

The annual harvest of 1.8 million board feet of sawtimber and 3,695 cords of pinyon-juniper fuelwood would disturb 525 acres (if clearcut) and result in the loss of 3,171 tons of soil annually in the short term. In the long term, increases in ground cover in pinyon-juniper woodland areas would reduce soil losses by 280 tons per year. If selective cutting is the method used for harvest, 1,312 acres of commercial forest land and woodland would be disturbed resulting in a short-term soil loss of 5,165 tons per year. In the long term, soil loss would be 700 tons per year less than existing loss. The significance of sediment yield resulting from timber harvesting is discussed under Impacts on Water Quality.

Erosion on typical aspen harvest sites would change from an initial rate of 1.1 tons per acre per year to about 6.8 tons per acre per year immediately following disturbance and then return rapidly to predisturbance conditions due to rapid regrowth of aspen sprouts.

Harvesting a maximum of 315 acres of aspen per year would increase soil loss by 1,800 tons per year on the basis of the change in erosion rate mentioned above. The significance of this increase is discussed under Impacts on Water Quality.

Impacts from Off-Road Vehicle Management. Off-road vehicle (ORV) restrictions in 63,184 acres of municipal watershed areas, debris flow hazard zones, and erosion hazard areas should result in beneficial impacts on soils (see Impacts on Critical Watershed Areas for a discussion of the impacts of ORV use). Restrictions in these areas, particularly erosion hazard areas that currently receive ORV use, would likely result in improved ground cover and reduced erosion.

Limiting ORV use on 56,868 acres of crucial big game winter range in areas with erosion hazard ranging from low to high would have a beneficial impact. ORV use is generally low, but is expected to increase substantially in the Battlement Mesa area. The limitation period would be from January through April when soils are either frozen or wet. Soils are most susceptible to ORV damage when wet; consequently, closures in these areas would protect the soils when they were most sensitive.

Restrictions to protect recreation resource values and in wilderness study areas would have minimal beneficial impacts due to the low level of current or projected ORV use.

Cumulative Impacts on Soils

Short-term increases in erosion would result from mechanical treatments and burning associated with terrestrial habitat, livestock grazing, and forestry management practices. In the long term, improved ground cover conditions would be expected to bring erosion below its current level. Short-term increases in erosion would also result from soil disturbance associated with minerals and transportation. Road construction would not be a major cause of erosion as roads would be built to BLM road standards.

Approximately 172,000 acres would be affected by ORV limitations. Limitations in erosion hazard areas where ORV use is presently occurring would prevent further damage and result in some vegetation recovery. ORV use limitations in big game crucial winter range would protect watersheds when they were most susceptible to damage. Other ORV limitations would provide limited benefits because they are in areas with minimal existing or projected ORV use.

Impacts on Water Quality

Impacts from Proposed Management Actions

Impacts from Water Quality Management. Review of project proposals and the addition of stipulations to prevent adverse impacts would potentially minimize water quality degradation in the short term and improve existing quality in the long term as a result of increases in cover (see Impacts on Vegetation). Monitoring four areas where known water quality problems exist (see Map 3-1) to identify the problem source and feasibility of reducing the problem would likely result in beneficial impacts to water quality. The problems in these areas are listed in the Management Situation Analysis available in the Glenwood Springs Resource Area office. These problems include high sediment, sulfate, and salinity levels. Improvements in water quality cannot be determined until the problem sources are identified and measures to reduce the problem selected.

Impacts from Minerals Management. Impacts would depend on the mining method and type of mineral mined. Potential short-term, generally insignificant salinity and sediment impacts would continue to occur from existing mineral developments. Impacts would continue until soils were stabilized by revegetation or other land treatments such as water bars, generally accomplished during rehabilitations.

Impacts from Terrestrial Habitat and Livestock Grazing Management. Sediment yield increases resulting from vegetation manipulations proposed to increase forage for wildlife and livestock would range from about 620 tons per year to about 13,000 tons per year, depending on the type of treatment. Impacts are less from mechanical treatment than from burning. In the long term, ground cover on treated sagebrush and mountain brush sites would increase above existing conditions and result in reduced sediment yield.

Local insignificant salinity impacts from vegetation manipulations would be proportional to runoff quantity and duration, mineral content of the soil, and the resultant soil disturbance and erosion. Excessive runoff and accelerated erosion, should they occur, would degrade water quality until the soils were stabilized or runoff velocities decreased.

Burning as a management tool for implementing range and wildlife vegetation manipulations would cause several chemical reactions and nutrient losses in addition to increases in runoff and sediment that would adversely affect water quality (see Impacts on Soils). Short-term increases in salinity in local streams and increases in algae blooms in stock ponds from increased phosphorous levels could also be expected. Impacts probably would not be significant, and concentrations of nutrients and salts would decrease rapidly as watershed conditions stabilized.

Livestock grazing management involving proper stocking rates, seasons of use, and plant use would have no significant impact on salinity. Implementation of allotment management plans would help minimize salinity impacts.

Little change in fecal coliform levels would be expected from livestock grazing management. The effects of an increase in livestock numbers probably would be offset by improved livestock distribution and by aquatic habitat improvements that protect riparian areas.

Impacts from Forest Management. Annual sediment yield resulting from harvesting 1.8 million board feet of sawtimber and 6,465 cords of fuelwood per year would range from 1,600 tons from clearcutting to 2,600 tons from selective cutting. Impacts per acre would be greater from clearcutting, but total acres disturbed would be greater from selective cutting.

In the long term, sediment yield from pinyon-juniper woodland harvest areas would decrease by 140 to 350 tons per year due to increases in ground cover conditions.

The maximum amount of sediment that would result from aspen harvest in any one year would be about 900 tons. Sediment increases from clearcut sites would be very shortlived because of the rapid

rate at which young aspen sprouts revegetate a site.

Impacts from Recreation Resource Management. Adding sanitary facilities at floatboating access areas would decrease the amount of bacteria entering surface waters, thereby improving water quality. The impact would be localized, beneficial, and long term.

Impacts from Wilderness Resource Management. Increased recreational use in wilderness areas would result in a corresponding increase in bacteria due to lack of established sanitary facilities. The impact would be dispersed throughout the area and would be intermittent depending on recreational use patterns.

Impacts from Off-Road Vehicle Management. Off-road vehicle (ORV) activity would decrease ground cover and reduce infiltration by compaction resulting in accelerated runoff and erosion (see Impacts on Critical Watersheds). Limiting ORV use to areas of non-saline soils would minimize dissolved solid water quality degradation. Restrictions proposed to control ORV use in sensitive areas would reduce overall adverse impacts and would likely have an insignificant, localized, long-term beneficial impact on water quality.

Impacts from Fire Management. Sediment and turbidity are the most significant water quality responses associated with fire. Sediment and turbidity result primarily from overland flow, and secondarily from channel scour caused by increased discharge. See Impacts from Terrestrial Habitat and Livestock Grazing Management for estimates of sediment produced from burning.

Cumulative Impacts on Water Quality

The short-term increase in sediment yield from all vegetation manipulation proposals and timber and woodland harvest would range from 3,500 to 25,000 tons per year. This increase would not be significant. The increases would be greatest immediately following treatment and would decline rapidly during the following two to three years as new vegetation became established. Sediment yield would decline more slowly thereafter. Table 5-3 indicates impacts by watershed from all vegetation manipulation and forest management proposals. The Proposed Plan would not result in significant impacts at the individual watershed level even under the maximum disturbance level of vegetation manipulation.

In the long term, increases in cover would result in an insignificant reduction in sediment below existing conditions.

Table 5-3. Sediment Yield Expected from Vegetation Manipulations and Timber and Woodland Harvesting

Capability Unit/ Watershed	Watershed Area (acres)[1]	Existing Annual Sediment Yield (tons/ acre/ year)[2]	Minimum Disturbance						Maximum Disturbance					
			Mechanical Vegetation Manipulation (tons/ year)[3]	Clearcut (tons/year)[4]			Total Sediment Yield (tons/ year)[5]	Change in Sediment Yield (tons/ acre/year)[6]	Burning Vegetation Manipulation (tons/ year)[7]	Selective Cut (tons/ year)[8]		Clearcut Woodland/ Aspen (tons/year)[9]	Total Sediment Yield (tons/ year)[10]	Change in Sediment Yield (tons/ acre/year)[11]
				Commercial Forest Land	Woodland					Commercial Forest Land	Woodland/ Pinyon-Juniper			
					Pinyon-Juniper	Aspen								
Garfield														
Battlement Creek	4,672	0.59												
Cache Creek	1,344	0.87	16			6	22	0.02	203			6	209	0.15
Divide Creek	65,528	0.83	25		41	453	519	<0.01	334		72	453	859	0.01
Garfield Creek	25,024	0.56	33			365	398	0.02	1,128			365	1,493	0.06
Parachute Creek	80,640	0.89	66	767		897	1,730	0.02	1,814	1,210		897	3,921	0.05
Rifle Creek	47,488	0.96	54		82	51	187	<0.01	3,608		144	51	3,803	0.04
Elk Creek	27,072	0.90	34		41	17	92	<0.01	590		72	17	697	0.01
Canyon Creek	14,144	0.65				222	222	0.02	335			222	557	0.03
Lower Colorado River	278,131	1.85	174		41	507	722	<0.01	3,208		72	507	3,787	<0.01
Subtotal	541,056	1.33	402	767	205	897	2,271	<0.01	11,220	1,210	360	897	13,687	0.02
Roaring Fork														
Fourmile Creek	5,440	0.97	15			97	112	0.02	194			97	291	0.05
Thompson Creek	6,400	0.49	17				17	<0.01	226				226	0.04
Prince Creek	5,056	0.71	16				16	<0.01	172				172	0.03
Sopris Creek	12,032	0.89	16			117	133	0.01	203			117	320	0.03
Cattle Creek	37,184	0.94	32		41	97	170	<0.01	772		72	97	941	0.02
Threemile Creek	8,320	0.66				213	213	0.03	196			213	409	0.05
Roaring Fork	162,048	0.88	132			11	143	<0.01	1,188			11	1,199	<0.01
Subtotal	236,480	0.86	228		41	535	804	<0.01	2,951		72	535	3,558	0.02
Eagle-Vail														
Cottonwood Creek	13,774	0.99				197	197	0.01	203			197	400	0.03
Gypsum Creek	16,064	1.40	58	107	41	137	343	0.02	974	169	72	137	1,325	0.08
Brush Creek	31,424	0.89	23	590		351	964	0.03	576	932		351	1,859	0.06
Eagle River	40,576	1.38	32	69		60	161	<0.01	578	109		60	747	0.02
Colorado River	12,480	0.85			41	285	326	0.03	184		72	285	541	0.12

Subtotal	11,304	1.15	113	766	82	897	1,858	0.02	2,515	1,210	144	897	4,766	0.04
Castle Peak														
Alkali Creek	3,616	0.96	15	54		162	231	0.01	170	85		162	417	0.02
Big Alkali Creek	28,352	0.66	9	349		388	796	0.03	139	629		388	1,156	0.04
Milk Creek	11,232	0.86	13	192		165	370	0.03	175	302		165	642	0.06
Eagle River	62,080	1.20	60	38		74	172	<0.01	760	60		74	894	0.01
Colorado River	75,264	1.25	28	77	328	262	695	0.01	512	121	576	262	1,471	0.02
Subtotal	200,544	1.09	125	760	328	897	2,110	0.01	1,756	1,197	576	897	4,426	0.02
King Mountain														
Deep Creek	8,896	0.65	15			43	58	<0.01	348			43	391	0.04
Sweetwater Creek	24,704	0.79	14			148	162	<0.01	190			148	338	0.01
Red Dirt Creek	3,136	1.30	14				14	<0.01	199				199	0.06
Cabin Creek	33,216	0.84	14		41	9	64	<0.01	368			9	377	0.01
Rock Creek	46,144	0.44	14	767		128	909	0.02	204	1,210		128	1,542	0.03
Colorado River	62,272	1.27	62	368	123	225	778	0.01	2,350	581	216	225	3,372	0.05
Subtotal	178,368	0.88	133	767	164	553	1,617	<0.01	3,659	1,210	216	553	5,638	0.03
Total	1,270,752	1.12	1,001	767	820	897	3,485	<0.01	22,101	1,210	1,368	897	25,576	0.02

[1]Watershed area within the resource area.

[2]Weighted average of sediment yield condition classes within each watershed. The midpoint of the range within each condition class was used to derive the overall average.

[3]Sediment yield resulting from mechanical manipulation of 10 percent or 40 acres (whichever is greater) of the vegetation proposed for manipulation by the terrestrial habitat and livestock grazing management programs in each watershed.

[4]Indicates sediment yield resulting from the maximum amount of timber that could be harvested from a particular watershed in any one year, the percent of pinyon-juniper that would be harvested in the watershed each year, and harvest of 10 percent of the aspen in a watershed in a year. Total aspen harvest would not exceed 315 acres in any one year.

[5]Total of columns 3, 4, and 5.

[6]Derived by dividing column 6 by column 2.

[7]Sediment yield resulting from burning 10 percent or 40 acres (whichever is greater) of the vegetation proposed for manipulation by the terrestrial habitat and livestock grazing management programs in each watershed.

[8]Indicates the sediment yield that would result from selective cutting of the maximum amount of timber that would be harvested in any one year and the percent of fuelwood that would be selective cut in a watershed each year.

[9]Sediment yield resulting from harvest of 10 percent of the aspen in each watershed. Total aspen harvest in the resource area would not exceed 315 acres in any one year.

[10]Total of columns 8, 9, and 10.

[11]Derived by dividing column 11 by column 2.

Impacts on Water Yield

Impacts from Proposed Management Actions

Impacts from Water Yield Management. Information collected from the experiment would be used to evaluate the effectiveness of including water yield design features in the aspen harvest proposals of the forestry program.

Impacts from Terrestrial Habitat and Livestock Grazing Management. Manipulating sagebrush and pinyon-juniper would have little effect on water yield. Sturgis (1975) indicates that sagebrush conversion increases water yield only when soils are sufficiently deep that roots of replacement vegetation are above soil occupied by the deeper roots of sagebrush (generally greater than 3 feet deep) and where precipitation is sufficient to wet the soil throughout its profile. These conditions would be met at very few sites within the resource area. Similarly, a review by Gifford (1975) indicates that little change in water yield can be expected from pinyon-juniper manipulation. Mountain brush (oakbrush) treatment, however, could increase water yield by 1 to 3 inches per year (Hibbert 1977).

The vegetation manipulations proposed by the terrestrial habitat and livestock grazing management programs would result in treatment of about 6,850 acres of mountain brush (mostly oakbrush) through mechanical manipulation to about 19,400 acres through prescribed burns. On the basis of a 20-year implementation schedule, 340 to 970 acres of mountain brush would be manipulated each year depending on the treatment method. Based on an average water yield increase of 2 inches for each acre treated, water yield would increase by 57 to 162 acre-feet per year. Water yield increases from mountain brush manipulation are short-lived, lasting no more than 5 years, if shrub growth is not controlled. Therefore, maximum increases in water yield would be reached after 5 years of implementation and would range from 285 to 800 acre-feet per year depending on treatment method. This level would be maintained through the 20-year implementation period and would then decline if shrub regrowth were not controlled.

Impacts from Forest Management. Maximum increases in water yield from commercial conifer forest land harvesting in the Rocky Mountain subalpine forest result when 40 percent of a timbered watershed is harvested in a series of openings less than eight tree heights in diameter (Leaf 1975). Increased water yield of 1 to 3 inches would be expected. When timber harvest is conducted by selective cutting of individual trees, increases in water yield are much less. Selective cutting resulting in the uniform removal of 50 percent of canopy cover density in low elevation, south-aspect lodgepole pine would increase water yield by 1 inch per acre per year. The same treatment of spruce-fir on north-aspect slopes would reduce water yield by 0.5 inches per acre per year (Leaf 1975). Water yield changes from harvesting 1.8 million board feet of commercial conifer forest land annually would range from no change through selective cutting to an increase of 112 acre-feet annually through a series of small clearcuts. Increases from small clearcuts would endure for up to 30 years.

After 5 years, water yield would not increase, if annual allowable harvest were conducted by selective cutting each year, and could increase by 560 acre-feet if harvested in a series of small clearcuts each year. After 20 years (full implementation) water yield could increase by as much as 2,240 acre-feet if each year's allowable cut were conducted by small clearcuts.

Commercial forest harvest would also affect the timing of increased water yield. In conifer areas, Leaf (1975) indicates that snowmelt in clearcut openings is more rapid than in the uncut forest. This accelerated melt increases streamflow earlier in the snowmelt season following clearcutting. If deep porous soils are present, base flows and flows following peak runoff would not be appreciably changed, and annual and daily peak flows would not be significantly increased, provided the forest cover on no more than 50 percent of the watershed is removed in a system of small openings.

The impact of aspen harvesting on water yield in this area is not yet known because the results of the experimental project are not yet known. The analysis of water yield impacts from aspen harvest, therefore, must be based on research conducted to date. Review of this research indicates a yield ranging anywhere from 1 to 5 inches on treated sites (Leaf 1975, Hibbert 1978). It also indicates that the yield declines as aspen sprouts revegetate a site and that yields probably disappear after about 5 years. Assuming an average increase in yield on clearcut sites of about 3 inches per year, harvest of a maximum of 315 acres per year would result in an average water yield increase of about 80 acre-feet per year and, after 5 years, would reach a maximum level of about 400 acre-feet per year.

Cumulative Impacts on Water Yield

The cumulative impact of vegetation manipulations and timber and woodland harvest proposed by the terrestrial habitat, livestock grazing, and forest management programs on water yield would be an increase ranging from 285 acre-feet per year

to 1,760 acre-feet per year after 5 years of implementation. The minimum increase would result from mechanical treatment of mountain brush, selection harvest of conifer forest, and no aspen harvest. The maximum increase would result from prescribed burning of mountain brush, conifer harvest by a series of small clearcuts, and harvest of a maximum of 315 acres of aspen each year. In 20 years, the life of the plan, the maximum increase that might be expected would be 3,440 acre-feet per year and would be dependent mostly on conducting each year's commercial timber harvest in a series of small clearcuts.

The maximum increase in water yield represents a 3 percent increase over existing water yield from public land in the resource area and an insignificant increase to the Colorado River system as a whole. The additional yield would provide additional water for local stockponds and reservoirs and could also be used by local water users if part of the additional yield occured during the water-short seasons of late summer and fall. BLM programs such as aquatic habitat, livestock grazing, and terrestrial habitat management could also benefit if additional water were produced during low flow periods.

Impacts on Critical Watersheds (Municipal Watersheds, Debris Flow Hazard Zones, and Erosion Hazard Areas)

Impacts from Proposed Management Actions

Impacts from Critical Watershed Areas. Debris Flow Hazard Zones— Designation of the Glenwood Springs Debris Flow Hazard Zone as an area of critical environmental concern (ACEC) would enable prescription of special management (including applicable recommendations from the Glenwood Springs debris flow study) to help reduce the debris flow hazard and the potential for harm and damage from debris flow incidents. These special recommendations would include prohibitions on vegetation manipulation, timber harvesting, and surface facilities on oil and gas leases; inclusion in a fire exclusion area and a sensitive area for utility and communication facility developments; and restrictions on livestock grazing (less than 30 percent utilization with a turnout date no earlier than mid-July) and off-road vehicle (ORV) use.

Municipal Watersheds—A high degree of protection for the quality of water derived from public land in municipal watersheds would be provided under the Proposed Plan. No surface disturbance which would adversely affect water quality would be permitted. Activities such as vegetation manipulation projects for livestock and wildlife, timber harvest, and surface facilities on oil and gas leases. The watersheds would also be designated as fire exclusion zones and sensitive areas for new utility and communication facility development. ORV use limited to existing roads and trails would also prevent any additional watershed degradation.

Erosion Hazard Areas—Eight erosion hazard areas would be managed to prevent further watershed damage through a seasonal ORV restriction in the spring when soils are wet (8,500 acres), limiting use to designated roads and trails (1,900 acres near Eagle), or limiting use to existing roads and trails (40,100 acres). The spring ORV restriction would protect an area when soils are wet and are most susceptible to damage. Limiting use to designated roads and trails would prevent further damage and initiate a vegetation recovery process in damaged areas. The ORV designation of limited to existing roads and trails would provide less protection than the designated roads and trails classification. It would probably not result in recovery of existing use areas but would prevent damage from occurring in new areas.

Impacts from Utility and Communication Facility Management. Including debris flow hazard areas and municipal watersheds in areas designated as sensitive for utility development would ensure adequate protection from impacts associated with utility development. A sensitive classification would require development proposals to demonstrate the ability to mitigate adverse effects of their proposal before approval.

Impacts from Fire Management. Including the debris flow hazard zones in a fire exclusion zone would help to reduce debris flow hazard by minimizing the area affected by fire. Maximum effort would be directed toward extinguishing wildfires as rapidly as possible in fire exclusion zones. A report prepared by the Colorado Geological Survey (Mears 1977) following the 1977 debris flow in Glenwood Springs indicates that a wildfire partially on public land above Glenwood Springs may have been responsible for increased runoff rates which may have in turn contributed to the debris flow in the city below.

Cumulative Impacts on Critical Watersheds

The Proposed Plan is not as restrictive as the Resource Protection and Economic Development Alternatives described in the DEIS but would nonetheless provide a high degree of protection for the quality of water originating on public land in municipal watersheds and reduce damage caused by debris flow events in debris flow hazard zones.

With the exception of one area near the town of Eagle, ORV restrictions proposed in erosion hazard areas would provide less protection than the Resource Protection and Economic Development Alternatives. Restricting ORV use to existing roads and trails rather than designated roads and trails would prevent ORV damage from spreading but would not allow for recovery of already damaged areas.

Impacts on Minerals

Impacts from Proposed Management Actions

Impacts from Mineral Management. Identifying 509,612 acres (90 percent of the resource area) potentially available for mineral location, 555,304 acres (98 percent of the resource area) potentially available to oil and gas leasing, and 549,508 acres (97 percent of the resource area) potentially available for mineral sales would make most of the public land with mineral potential available for possible development. Identifying 28,500 acres of public and private lands as acceptable for further consideration for coal leasing would make approximately 1.6 billion tons of coal potentially available for future leasing. Identifying 1,560 acres as unacceptable would eliminate that acreage from further leasing consideration at this time.

Continuing the mineral location closure on 31,204 acres near the Naval Oil Shale Reserve for oil shale development would result in insignificant adverse impacts to the mineral industry because of a lack of industry interest for minerals other than oil shale in these areas.

Impacts from Existing Restrictions. Maintaining the mineral closure on 1,892 acres of reclamation project sites should have an insignificant impact because of the small area at each site.

Continuing to close 5,120 acres of public water reserves to mineral location should have an insignificant impact because of the small areas involved.

Continuing to close 1,430 acres for recreation and public purpose to mineral location should have an insignificant impact because of the small area involved.

Maintaining 1,360 acres at the Rifle Mountain Park and Rifle Fish Hatchery as closed to oil and gas surface facilities should have an insignificant impact because of the small areas involved.

Continuing to close 21,218 acres of public land to oil and gas surface facilities on the Fryingpan, Roaring Fork, Crystal and Colorado River corridors would increase development costs because directional drilling would be required if oil and gas exists.

Impacts from Wilderness Resource Management. Closing 10,118 acres of preliminarily suitable wilderness areas to mineral location, sales, and oil and gas leasing would have a minor impact on mineral development because mineral exploration and development activities conducted in these areas and geologic inference indicate a low potential for mineral development.

Impacts from Recreation Resource Management. Closing 2,470 acres in Deep Creek Canyon to mineral location and mineral sales and placing a no surface occupancy for oil and gas leasing restriction on the area would prohibit mineral development except where mining claims occur with prior existing rights. At present, mining claims for limestone exist in the general area. CF&I has been issued a right-of-way for a tramway to develop limestone south of Deep Creek Canyon. Prohibiting the removal of the limestone from Deep Creek would result in a loss of opportunities to develop a limestone mining operation within this area.

Identifying 3,456 acres near Hack Lake as closed to oil and gas surface facilities likely would not have significtant impacts on the oil and gas industry as this area is presently not under lease and is believed to have a low development potential for oil and gas production.

Impacts from Critical Watershed Areas. Closing 5,858 acres of municipal watersheds to oil and gas surface facilities would result in higher costs for development within these areas. The oil and gas potential is considered high in these areas, with oil and gas activity occurring near the areas on private surface/private minerals.

Impacts on minerals from closing 7,126 acres in the Glenwood Springs debris flow hazard zone to oil and gas surface facilities would be low because the area is not geologically favorable for oil and gas development.

Impacts from Land Tenure Adjustments. Disposing of 15,500 acres of public land would have an insignificant impact on mineral development because mineral rights would be retained on areas containing known development potential.

Cumulative Impacts on Minerals

Closing 56,430 acres of public and private land to mineral location would continue to prevent mineral development in those areas. However, the acreage, which is only 10 percent of the public land in the resource area, is not considered significant when compared to the acreage available to entry

(509,612 acres). The 31,204 acres closed to mineral location around the Naval Oil Shale Reserve was withdrawn for the development of oil shale resources.

Closing 10,738 acres of public and private land to oil and gas leasing, which is only 2 percent of the resource area, would not be significant since most of the potentially valuable oil and gas reserves are already under lease, and 555,304 acres of public land would be potentially available for oil and gas development.

Closing 44,814 acres to oil and gas surface facilities, which is only 6 percent of the resource area, would continue to increase drilling costs and potentially exclude oil and gas development, since directional drilling would be required.

There are 28,520 acres of public and private land identified for further consideration for coal leasing. A total of 1,560 acres would be closed to potential coal development. Because industry interest is unknown, impacts associated with these figures cannot be assessed at this time.

Closing 16,534 acres to mineral sales, which is only 3 percent of the resource area, would not be significant since ample supplies are potentially available in other areas (549,508 acres). The impacts of selling mossrock, top soil, sand and gravel, scoria and fill dirt in common use areas would have insignificant impacts as stated in the Mineral Materials Umbrella Environmental Assessment. Table 5-4 summarizes the limitations on minerals.

Table 5-4. Proposed Mineral Limitations

Limitation	Acres	Acres Potentially Available for Development
Closed to mineral location	56,430	509,612
Closed to oil and gas surface facility location	44,814	
Closed to oil and gas leasing	10,738	555,304
Eliminated from coal leasing consideration	1,560	28,520
Closed to mineral sales	16,534	549,508

Impacts on Aquatic Wildlife

Impacts from Proposed Management Actions

Impacts from Aquatic Habitat Management. Projects to improve aquatic habitat such as instream structures would increase aquatic invertebrate populations; lower water temperatures; improve spawning, resting, and holding areas for fish; allow for better fish migration; and reduce stream bottom siltation by increasing water velocities in riffles. Projects such as fencing and vegetation reestablishment to improve riparian habitat on 60.2 miles of public stream and 2 lakes (5 surface acres) would reduce water temperatures and stream bank damage and increase terrestrial invertebrate populations that are a source of food for fish. Maintaining minimum stream flows on 43 additional streams would provide conservation pools for fish during periods of low flow and would sustain riparian habitat during dry periods. These projects would improve fish condition, productivity, and longevity. Improvements would begin to occur about 2 years after project implementation and would last about 20 years. (This would also apply to projects proposed by other resources that would affect water quality or water yield.)

Impacts from Water Quality Management. Measures taken to improve water quality on the Milk and Alkali Creek watersheds could reduce the sediment load in the Eagle River, thereby increasing overall fish and invertebrate production in the Eagle River.

Impacts from Water Yield Management. An increase in water yield, if it occurs during the normal low flow period of late summer, would benefit fish populations in those streams where low flow is a limiting factor. Some increase in riparian habitat resulting from an increase in the water level could also occur which would have a positive benefit on water quality, invertebrate populations, and stream temperature.

Impacts from Terrestrial Habitat and Livestock Grazing Management. Vegetation manipulations would have no significant short-term detrimental impacts on fisheries because proposed projects are limited to zones of low to medium erosion, and buffer strips would be left along streams. In the long term, aquatic habitat conditions would improve as a result of vegetation manipulations because of increased ground cover.

Fisheries in the lower portion of the Colorado River could benefit from the protection and more

intensive management of aquatic habitat anticipated under cooperative management and the area of critical environmental concern (ACEC) designation and its supporting recommendations.

Implementation of proper stocking rates and improved livestock distribution through monitoring, water development, fencing, and vegetation manipulation should reduce grazing pressure in riparian zones. This would reduce erosion and bank damage and improve riparian vegetation which in turn would reduce water temperatures and improve stream quality for fish.

In conclusion, these long-term benefits would have a significant impact on aquatic conditions and associated fisheries.

Impacts from Forest Management. In the short term, harvesting commercial forest land and woodland would result in the same impacts as discussed under vegetation manipulation, Impacts from Terrestrial Habitat and Livestock Grazing Management. Application of required management stipulations and proper road layout and design features would minimize adverse impacts to the aquatic ecosystem.

Impacts from Recreation Resource Management. Increased fishing would increase fish harvest (reducing the chance of winter kill in overpopulated streams and lakes) and cause an insignificant loss of riparian habitat from trampling and vehicle use.

Impacts from Land Tenure Adjustments. Aquatic habitat management opportunities would be lost on 1.5 miles of stream located on public land parcels proposed for disposal.

Impacts from Off-Road Vehicle Management. Off-road vehicle (ORV) closures would allow an increase in ground cover and a decrease in erosion and, consequently, an increase in stream sedimentation, especially where roads cross streams, thus improving water quality for fisheries.

Streams located in areas open to ORVs could continue to be damaged by vehicles crossing or driving down stream channels. Since existing and projected ORV use is low, no significant increase in impacts on aquatic habitat is predicted.

Impacts from Transportation Management. Providing access through other resource activities to 24.8 miles of presently inaccessible public fishing streams would improve stream management and increase fishing opportunities.

Cumulative Impacts on Aquatic Wildlife

In the short term, vegetation manipulations proposed by the various resource programs would result in insignificant increases in sediment and insignificant adverse impacts to aquatic habitat.

In the long term, aquatic and riparian habitat improvements and vegetation manipulation projects could increase invertebrate and fish populations and improve stream quality, fish condition, and water quality. This would occur through increased baseflows during low flow periods and improved water quality following reestablishment of vegetation on disturbed sites. The significance of these impacts cannot be determined until actions are implemented and monitored.

The cooperative management and ACEC designation with the supporting recommendations, could improve aquatic habitat on the lower Colorado River, increasing fish and invertebrate production.

Managing all suitable aquatic and riparian habitat on public land to obtain optimal aquatic habitat conditions would provide long-term beneficial impacts such as increased fish populations which in turn would provide more and better fishing opportunities.

Impacts on Terrestrial Wildlife

Impacts from Proposed Management Actions

Impacts from Terrestrial Habitat Management. The allocation of 46,210 animal-unit months (AUMs) of existing forage to big game would exceed existing big game forage demands by 2.4 percent (1,090 AUMs) but would be 20.3 percent (11,723 AUMs) short of meeting the forage requirement of the Colorado Division of Wildlife's 1988 big game population goals. Annually treating 992 acres of pinyon-juniper, mountain brush (oakbrush-serviceberry), and sagebrush through approved habitat improvement methods would provide an additional 638 AUMs each year. Existing forage plus forage gained through treatment would still fall short of meeting Colorado Division of Wildlife 1988 population goals (the objective of this proposal) by 9 percent. Although forage is adequate to maintain existing populations resource area wide, it is inadequate to maintain population numbers in some game management units. Therefore, forage increases or decreases within these game management units could be significant, especially in crucial winter ranges, such as along the Colorado River from Dotsero to McCoy, and near Cattle Creek east of Glenwood Springs. The forage allocation by game management unit is shown in Table 5-5. Chapter 3, Livestock Grazing Management, explains the methodology used in allocating forage.

Table 5-5. Wildlife Forage Allocation by Game Management Unit

Game Management Unit	Existing Demand[1] (AUMs)	Initial Allocation (AUMs)	Percent Change From Existing Demand	Colorado Division of Wildlife Goals (AUMs)[2]	Projected Allocation (AUMs)	Percent Change from Existing Demand	Percent Change from Colorado Division of Wildlife Goals	Density of Animals	Number of Animals	Size of Area
15	606	801	+32	694	889	+47	+28	High	Moderate	Small
25	4,905	3,300	−33	5,904	4,348	−11	−26	Moderate	Moderate	Medium
26	4,581	2,313	−50	5,336	3,325	−27	−38	Moderate	Low-moderate	Medium-large
32	3,179	4,084	+28	4,363	4,390	+38	+1	Low-moderate	Moderate-high	Medium-large
33	7,198	7,759	+8	9,591	8,722	+21	−9	Low-moderate	Large	Large
34	2,018	2,200	+9	2,343	2,482	+23	+6	Low	Low	Small
35	5,291	6,697	+27	6,308	6,858	+30	+9	Low	Low	Small
36	917	817	−11	1,134	919	0	−19	Moderate	Moderate-low	Medium
42	3,943	5,939	+51	5,052	6,047	+53	+20	Low	Large	Large
43	4,446	5,196	+17	6,851	5,759	+30	−16	Moderate-high	Large	Large
44	5,497	5,353	−3	7,011	6,258	+14	−11	Moderate-high	Large	Large
444	1,596	1,074	−33	2,130	1,643	+3	−23	High	Large	Medium
47	943	647	−31	1,216	953	+1	−22	Moderate-high	Moderate	Small
Total	45,120	46,210	+2	57,933	52,593	+17	−9			

[1]Estimated 5-year average from 1976-1980.
[2]Colorado Division of Wildlife Goals for 1988.

The initial forage allocation would meet or exceed the existing demand for big game forage except in Game Management Units 25, 26, 444, 47, and possibly 36 and 44 (those areas mentioned previously along the Colorado River and Cattle Creek). These game management units all have moderate to high population densities. The initial forage allocation to big game in these first four areas would be from 31 to 52 percent short of meeting current big game forage demand.

Treating 19,840 acres of vegetation over a 20-year period should provide enough additional forage to support a 16.6 percent increase above existing big game populations, improve big game health and productivity, improve habitat and wildlife species diversity, and change wildlife species composition and density. Bird and small mammal habitat losses in treatment areas would be short term. Improved habitat diversity resulting from these treatments would improve wildlife diversity. When considering the small amount of acreage treated in a project area compared to the total land base in the resource area and the relatively quick revegetation of the treatment areas, overall adverse impacts to wildlife would be insignificant. Forage increases gained by manipulating vegetation would begin in about 2 years. To maintain these forage increases, habitat improvement projects would need to be maintained every 5 to 15 years, depending upon the habitat type involved, to control regrowth.

Identification of habitat suitable for and subsequent introductions of state-threatened (river otter) or federal-endangered species (peregrine falcon) would help maintain a viable population of these species within the state. Introductions of big horn sheep, sagegrouse, sharptail grouse, and turkey would increase these populations. They, in turn, could be used for other introductions, hunting, and increased gene pools. Introductions would be initiated by the Colorado Division of Wildlife.

Improvement of riparian habitat could result in local increases in waterfowl, furbearers, nongame, and small game. This would provide additional local hunting and bird-watching opportunities.

Water developments would allow some existing wildlife populations to expand into areas previously unavailable because of lack of water.

By consolidating administration of 9,710 acres of public and state lands through a cooperative management program with the Colorado Division of Wildlife, effectiveness of habitat management could be increased. This could benefit the wildlife using these areas through more habitat improvement projects and better administration. The most significant benefits to wildlife would be realized by cooperatively managing the public lands along the Colorado River below New Castle as an area of critical environmental concern (ACEC). Benefiting species would be bald eagles, great blue herons, waterfowl, and resident populations of mule deer, furbearers, and other riparian-dependant species.

Increased hunting opportunities and success and better population management would probably occur in areas identified for additional public access. This would result in healthier animals, improved productivity, and reduced game damage to privately-owned land.

Removing livestock from summer and high winter ranges by November 15 and from crucial big game winter ranges by October 15 (or when use of current annual growth of browse species reaches 20 percent, whichever comes first) would reduce competition between livestock and big game for browse. Big game would then have more and better feed going into the winter, resulting in less winter mortality and better fawn and calf survival.

Impacts from Water Yield Management. Any new springs or increases in summer streamflows resulting from water yield increases could create additional riparian habitat through a rise in the water tables. However, this increase would probably be insignificant resource area wide.

Impacts from Aquatic Habitat Management. Small riparian habitat improvements along 60 miles of stream would result in locally insignificant increases in small game and nongame populations. Stream structures would raise the local water table and, consequently, increase the riparian habitat acreage. Increased recreational use would not significantly stress wildlife or result in riparian vegetation losses.

Impacts from Livestock Grazing Management. Annually removing 1,390 acres of sagebrush, mountain brush, and pinyon-juniper vegetation to provide additional livestock forage would result in impacts similar to those discussed under wildlife vegetation manipulation. Vegetation composition, density, and form and age class would be changed, providing some additional big game forage and creating additional habitat for wildlife species dependent on the successional vegetation type. Species dependent on the original vegetation type would be displaced. The Resource Area Profile (available in the Glenwood Springs office) contains a list of the wildlife species that would be affected.

Water developments for livestock grazing management would benefit local wildlife populations by providing additional water sources for wildlife and by reducing vegetation damage from livestock concentrations.

Fencing would improve livestock management, protect water sources and riparian vegetation from trampling, reduce overgrazing, and reduce competition between big game and livestock for forage. Benefits would be local and would not affect total wildlife populations. Fences could physically restrict movement or result in entanglement of big game. This would be most severe on winter ranges and migration routes. Required management stipulations would reduce the significance of these impacts.

Delaying spring livestock turnout until key species of grass reached an average of 6 inches in height would increase the amount of early spring feed available to big game. In the spring, green grass and forbs are very important to lactating does and cow elk and to fawn and calf survival.

Impacts from Forest Management. The impacts of annually harvesting from 269 to 672 acres of commercial forest land species, principally in the King Mountain, Castle Peak, and Eagle-Vail Capability Units, would vary with species harvested, method and season of harvest, length of contract, and size and location of the timber sale. Beneficial impacts would include a localized, long-term increase in big game forage resulting from an increase in grass, forbs, and shrubs; a change in form and age class of trees; and, consequently, an increase in habitat diversity. Detrimental impacts would include a short-term loss of understory, thermal and hiding cover, and nesting habitat of those wildlife species dependent upon the tree species harvested. Loss of habitat could equate to a loss of life for those directly impacted animals having small territories. The larger wildlife species have larger territories and would probably adapt to a smaller territory or temporarily move to an undisturbed area. Detrimental impacts would be reduced by implementing required management stipulations listed in Appendix B.

The majority of the pinyon-juniper woodland stands in the resource area are located in either big game winter or crucial winter range. Annually harvesting from 256 acres to 640 acres of pinyon-juniper woodland would result in locally significant, long-term increases in big game forage, habitat diversity, and populations of wildlife species associated with more open stands of pinyon and juniper. These impacts would last until pinyon and juniper reestablished on the site.

Short-term adverse impacts would include a temporary loss of forage, thermal and hiding cover, and solitude for wildlife during the harvest period; however, these impacts would be minimal because of the small size and design of the cutting areas. Wildlife species directly dependent upon the nesting habitat provided by the trees in the harvest site could die. The application of required management stipulations for woodland harvesting (Appendix B) would reduce the significance of adverse impacts to an acceptable level.

Implementation of small irregular clearcuts in aspen stands over a 70-year rotation period would

increase the variation of aspen age classes thereby increasing wildlife habitat and species diversity within the stands. Prolific aspen sprouting would provide additional browse for big game. Adverse impacts such as disruption of solitude, loss of some habitat important to species dependent upon mature aspen, and loss of thermal and hiding cover would occur. However, these detrimental impacts would be insignificant. (See Assumptions, Chap. 5)

Impacts from Recreation Resource Management. Designation of recreation areas would increase the number of persons in wildlife habitat. However, because use would be dispersed and expected increases would be small, the resulting stress to wildlife would probably be low, much less than during hunting seasons.

Impacts from Visual Resource Management. Restrictions on size, shape, location, and treatment methods placed on vegetation manipulations in visual resource management Class II areas would, in some cases, be supportive of wildlife objectives. However, they could result in low cost-benefit ratios and thus reduce the number of projects that could be accomplished. This would reduce the amount of forage increases that could be gained through vegetation manipulation in localized areas and, consequently, could reduce the number of additional big game animals the area could support.

Impacts from Land Tenure Adjustments. Table 5-6 lists, by capability unit, the loss of wildlife habitat from land disposal. Approximately 7,386 acres, or approximately 2.3 percent of the crucial mule deer winter range and 2.2 percent of the total crucial elk winter range provided by public land in the resource area, would be designated for disposal under the Proposed Plan. Most of these tracts are small and surrounded by private land that could be developed; therefore, the loss of this habitat would probably have no significant detrimental impact on overall big game herds.

Table 5-6. Wildlife Habitat Disposals

Capability Unit	Big Game Summer Range (acres)	Big Game Crucial Winter Range (acres)	Riparian Habitat (stream miles)
Garfield	1,503	4,479	1.3
Roaring Fork	216	2,015	1.8
Eagle-Vail	2,374	422	0
Castle Peak	216	260	0.3
King Mountain	519	210	0.7
Total	4,828	7,386	4.1

Loss of summer range could be locally significant. However, because of the large amount and good condition of summer range available throughout the resource area, and because this type of habitat is not generally developed in an intensive manner, the overall adverse impact would be insignificant.

Disposals of public land containing riparian habitat values would have an insignificant detrimental impact on wildlife because the riparian values are very limited on these tracts and detrimental impacts to local populations would occur only if the tracts were developed and riparian values lost.

Impacts from Off-Road Vehicle Management. Limiting snowmobile use on 75,463 acres of big game winter range would significantly reduce stress on local big game herds. Less stress during winter would result in improved health conditions and productivity in the spring and would probably increase deer and elk populations.

Impacts from Transportation Management. Providing public access to presently inaccessible public land would make big game herds more accessible to hunters thus increasing hunting success. This could reduce game damage on private land, reduce winter mortality, and bring about an increase in animal health and productivity. Access to public land could be restricted if it caused unacceptable levels of stress during crucial periods.

Impacts from Utility and Communication Facility Management. Designating sensitive zones would protect especially fragile wildlife habitat such as elk calving areas, sage grouse strutting areas, and bald eagle roosting trees by requiring adequate mitigation for siting of facilities.

Impacts from Fire Management. Controlled use of fire to manipulate vegetation could provide additional forage and improved habitat conditions, resulting in improved animal health and productivity. This would offset the significance of adverse impacts such as short-term habitat loss and fire-caused mortality to small game and nongame wildlife species.

Cumulative Impacts on Terrestrial Wildlife

Introductions of big horn sheep, sage and sharptail grouse, turkey, peregrine falcon, and river otter would help stabilize or increase these populations. The proposed habitat improvement projects, seasonal off-road vehicle restrictions, cooperative management areas, ACEC designation, and additional access would all provide long-term beneficial impacts to wildlife.

Theoretically, initial forage allocations would provide enough habitat to increase big game populations by 2.4 percent. The allocation of the addition-

al forage produced through habitat improvement projects would increase existing big game populations by 16.6 percent but would still be 9 percent short of meeting the Colorado Division of Wildlife goals. If the total acreage of vegetation were manipulated as proposed by all resources over the next 20 years, small game and nongame species composition and numbers would vary locally. However, composition and numbers would not significantly change in the long term resource area wide because of the great habitat diversity offered by public and private lands, the dispersed nature and size of each project, and the time-frame involved.

An estimated 8 percent of the big game crucial winter range on private land could be lost to development in the next 10 years. Loss of this range would increase the big game forage demand on public land by an estimated 6 percent if total herd levels were to remain the same. In addition, 7,386 acres (2 percent) of big game crucial winter range on public land would be lost through land disposals if the land sold were fully developed.

In summary, over the next 20 years, if funding were available and estimated forage increases achieved, an overall 9 percent increase in existing big game populations could occur (17 percent increase from habitat improvements less 8 percent loss from disposal of public land and development on private land). This would be 17 percent short of meeting the Colorado Division of Wildlife population goals.

The recommendations in this Proposed Plan would increase hunting and viewing opportunities and, consequently, increase incomes of business establishments such as restaurants, motels, sporting goods stores, and gas stations. See Impacts on Social and Economic Conditions for additional impacts to local communities.

Impacts on Livestock Grazing

Impacts from Proposed Management Actions

Impacts from Livestock Grazing Management. The initial allocation of 37,852 animal-unit months (AUMs) would be a 1 percent increase over existing use but a 33 percent decrease from active preference. Forage increases of 12,742 AUMs through vegetation manipulation practices would bring final allocation up to 50,594 AUMs which is 35 percent greater than existing use but still 11 percent short of the active preference objective of 56,885 AUMs. Table 5-7 shows this information by capability unit.

Table 5-7. Relation of Livestock Forage Allocation to Existing Use and Active Preference

Capability Unit	Initial Allocation (AUMs)	Percent Change from Existing Use	Percent Change from Active Preference	Projected Allocation (AUMs)	Percent Change from Existing Use	Percent Change from Active Preference	Unallotted Available for Livestock[1]
Garfield	17,791	+1	−41	26,156	+46	−13	316
Roaring Fork	4,861	+15	−38	7,150	+70	−8	238
Eagle-Vail	3,790	+4	−16	4,066	+11	−10	32
Castle Peak	8,593	+13	−11	9,421	+23	−2	0
King Mountain	2,817	−30	−42	3,801	−6	−22	170
Total	37,852	+1	−33	50,594	+35	−11	756

[1]AUMs in 24 unallotted allotments available for livestock use.

The short-term impact from initial allocation would be slight to moderate increases from actual use in all capability units except King Mountain which would have a highly significant reduction. The impacts would vary by allotment. AUMs on allotments at lower elevations encompassing crucial wildlife range would decrease while those on allotments at higher elevations would increase. The increases indicated would not be used on spring-fall ranges where the numbers of stock are limited by U. S. Forest Service permits. Permittees in the King Mountain Capability Unit would have to acquire 1,211 AUMs of forage or reduce their herd sizes 30 percent in the short term and would still have a significant reduction from active preference in the long term. The long-term impact would be slight to moderate significant decreases from active preference in all capability units. In addition to the allocations by allotment, there are 756 AUMs on 24 unallotted allotments that could be used by livestock to offset some of the potential reductions. This is 2 percent of existing use and 1 percent of active preference.

Setting turnout dates back in the spring (if necessary following monitoring) would have highly signifi-

cant adverse impacts on permittees. Spring public range is needed to move livestock off private meadows that produce hay for the following winter's feed. Permittees generally have an established time to enter summer range, and shortening the spring season would not allow full use of their AUMs.

Range improvements, including vegetation manipulation, would improve livestock distribution, reduce livestock concentrations, and provide for more even use of forage. This would help to maintain those allotments in satisfactory range condition and improve those in unsatisfactory range condition. Improved range condition would increase forage quantity and quality thereby increasing the potential for improved livestock production.

Impacts from Water Yield Management. Slight to moderate beneficial impacts would result from management actions that would increase water in stock ponds and increase the amount and duration of springflows and streams, especially intermittent streams. During the grazing season, this would allow livestock to stay in an area longer or move into areas previously without water thus gaining better distribution of stock on the range. The exact extent of the beneficial impacts cannot be determined until management areas and sizes are determined.

Impacts from Critical Watershed Areas. Holding mid-July use to less than 30 percent might have an impact on allotments with debris flow hazards. Data indicate production might be adequate to use active AUMs without exceeding this level; however, monitoring would be necessary.

Impacts from Aquatic Habitat Management. The amount of forage and water excluded from livestock use by riparian vegetation enclosures would be insignificant and thus would not impact livestock grazing (see Required Management Stipulations, Appendix B).

Impacts from Terrestrial Habitat Management. Vegetation manipulation would provide long-term benefits to livestock by increasing the amount of available forage. Though most of the increased forage developed for wildlife would accrue to wildlife, some would be available for livestock. The short-term impact (2 years) of keeping livestock off the vegetation treatment areas would depend on the size of the area treated and control of the stock.

Prohibiting livestock grazing after November 15 on 9 allotments would be insignificant. Prohibiting livestock grazing after October 15 on 44 allotments would require operators of those allotments to take stock home up to 6 weeks early and provide additional feed, either grown or purchased hay. This could be highly significant depending on the amount of additional feed required. (See Table F-3, Appendix F, DEIS), for current season-of-use by allotment.) It is not known how many more might be affected by the 20 percent browse use cut-off criterion.

Impacts from Forest Management. Slight to moderate beneficial impacts would result from woodland management where livestock forage production and animal distribution would be increased with the removal of pinyon-juniper. Aspen management would result in similar impacts of increased forage in the understory and increased water yield aiding distribution where duration of flow is lengthened or new flows created. The exact extent of the beneficial impacts cannot be determined until management areas and sizes are determined.

Impacts from Visual Resource Management. Visual resource management Class II objectives potentially could increase the costs of vegetation manipulation projects because of limitations on size, shape, location and treatment methods resulting in low cost-benefit ratios. The extent of the adverse impacts cannot be determined until site-specific locations are determined.

Impacts from Land Tenure Adjustments. Land disposals would involve approximately 10,000 acres and 1,756 AUMs on 54 allotments. Significance of impacts to each operation varies considerably; however, 25 allotments would lose all of their public land. Of these 25 allotments, 9 contain fewer than 15 AUMs. While removing this land from grazing might not force any operators out of business, it would certainly require adjustment in management and reduction of herd size or acquisition of replacement AUMs, all of which would have an adverse economic impact on the operations.

Impacts from Fire Management. The impacts of fire management would be highly beneficial. Using fire to manipulate shrubland and woodland would increase livestock forage availability. The identification of areas for fire management around expensive range improvements helps limit potential fire losses. The extent of beneficial impacts cannot be determined until specific fire management plans are prepared.

Cumulative Impacts on Livestock Grazing

Significant beneficial impacts would result from vegetation manipulation proposed by livestock grazing, forest, and terrestrial habitat management programs increasing forage availability for livestock. Over the 20-year implementation period, vegetation manipulation of at least 27,800 acres would provide an additional 12,742 AUMs. This is approximately a

35 percent increase in AUMs above existing livestock use but 11 percent short of active preference.

Fifty-four (54) allotments would be adversely affected by land tenure disposals, 44 by the October 15 cut off date, and 2 would be adversely affected by both actions.

Vegetation manipulation proposals would also have an undetermined beneficial impact on livestock grazing by providing better livestock distribution through increased water yield.

Impacts on Vegetation

Impacts from Proposed Management Actions

Management actions that would not result in conversions generally would have insignificant impacts on vegetation because large scale vegetation changes would not occur. Management actions such as timber and fuelwood harvest and vegetation manipulation for increased livestock and wildlife forage production would reduce ground cover and disturb soils, resulting in localized adverse impacts. The localized significance of vegetation manipulations would be reduced by the 20-year implementation schedule, project dispersion throughout the resource area, and required management stipulations (Appendix B) for project implementation. As assumed in the Proposed Plan, harvesting forest land and manipulating vegetation for livestock grazing and terrestrial habitat management would result in the following annual vegetation disturbances:

Commercial Forest Land Management (672 acres)—Ponderosa Pine, Douglas-fir, Spruce, Lodgepole Pine

Woodland Management (955 acres)—Pinyon Pine, Juniper, Aspen, Subalpine Fir

Livestock Grazing Management (1,390 acres)—Sagebrush, Mountain Brush, Pinyon Pine, Juniper

Terrestrial Habitat Management (992 acres)—Sagebrush, Mountain Brush, Pinyon Pine, Juniper

The acreage shown for commercial forest land and woodland management is the allowable harvest converted to acres. The annual acreage shown for livestock grazing and terrestrial habitat management is 5 percent of the total proposed.

The figures shown are proposed by each resource; however, in some cases, acreages proposed for management overlap and therefore cannot be totaled. For example, cutting firewood in pinyon-juniper or aspen would also meet livestock or wildlife needs for increased forage.

Site-specific impacts of vegetation changes are discussed under the resource affected. For example, the impacts of brush control on wildlife are discussed under Impacts on Terrestrial Habitat Management.

Modifying mountain shrub, sagebrush, pinyon-juniper, and forest vegetation types in relative amounts indicated above for 20 years would not significantly affect vegetation types in the resource area. This is because of the tremendous variety of types and species diversity present since the resource area lies in the transition zone between two distinctly different physiographic regions—the Colorado Plateau and Southern Rocky Mountains.

No adverse impacts would occur to known occurrences of threatened or endangered plant species from any management action that has identified a site-specific project location. Threatened, endangered, or sensitive plant species would be protected from adverse impacts of management actions through activity plans and environmental assessments when specific site locations are identified. If a project is proposed near a known occurrence of a threatened, endangered, or sensitive species or in its habitat, a survey would be done to determine if any individuals of the species were present.

Cumulative Impacts on Vegetation

Cumulative impacts on vegetation would be the same as those discussed under Impacts from Proposed Management Actions.

Impacts on Forestry

Impacts from Proposed Management Actions

Impacts from Forest Management. Managing 17,905 acres of commercial forest land would result in a potential annual allowable harvest of 1.8 million board feet. This is approximately the same level as current management. Including aspen and subalpine fir in the acreage suitable for woodland harvest would increase the present acreage of 58,555 to 82,470, an increase of 23,915 acres. Managing 82,470 acres of suitable woodland would result in a potential annual harvest of 6,465 cords. Pinyon-juniper fuelwood use, currently averaging 1,800 cords annually, would be limited to a potential annual harvest of 3,535 cords. Aspen and subalpine fir presently are used only as minor fuelwood products. Since the demand for aspen and subalpine fir

would dictate the amount harvested, the total annual woodland harvest would not be expected to reach 6,465 cords.

Harvest practices such as clearcutting, shelterwood cutting, selective cutting, and commercial thinning would increase stand productivity thereby increasing revenues and improving wildlife habitat.

Forest development practices such as precommercial thinnings and plantings would increase vigor and growth in managed forest stands and thus increase forest production potential. Actual increased production is unknown but is considered significant because it would decrease disease and pest incidence in these stands.

Acquiring legal access into presently inaccessible forest stands would open these areas to public land management.

Proposed management actions in mature or overmature forest stands would help maintain the overall health and productivity of the forest resource. Mortality volume losses often exceed growth in overmature stands, and by harvesting these decadent stands, sites would shortly reforest to young, prolific-growing trees. Through harvesting, an additional wood supply would be made available to the wood products industry.

Impacts from Water Yield Management. The impacts of harvesting aspen to increase water yield under the forest management program are unknown at this time. Once the soundness of this practice has been verified and the sites selected for harvest, the impacts can be analyzed. Also, until the experimental project is designed, the impacts of this proposal cannot be quantified. These impacts would be analyzed in a site-specific analysis prior to conducting the experiment.

Impacts from Critical Watershed Areas. Closing 525 acres of woodland in municipal watersheds and 655 acres of woodland in severe debris flow hazard zones would remove a total of 1,180 acres from the total woodland base of 214,310 acres. When compared with the total base, this loss is insignificant.

Impacts from Livestock Grazing and Terrestrial Habitat Management. Chaining in the pinyon-juniper forest type would conflict with woodland management objectives for fuelwood sales if the chained trees were not made available for fuelwood collection. Chained pinyon-juniper could be inaccessible for fuelwood collection depending on location and access. In addition, this woodland resource would be lost if burned. Proposed pinyon-juniper vegetation manipulation areas are unknown because the livestock grazing management objectives for chaining and burning cover other vegetation types. Woodland species could take 40 years to regenerate after chaining and 60 years to regenerate after burning. This loss would be considerable, especially if a large degree of vegetation manipulation occurred on forest land suitable for forest management.

Minor beneficial impacts would be gained from chaining practices, such as increasing the available supply of fuelwood that could be offered for sale, if such chainings were accessible.

Harvesting aspen to increase livestock and wildlife forage while possibly increasing water yield would also increase the actual woodland harvest, thus helping achieve the annual allowable harvest of 6,465 cords.

Increased livestock numbers would increase damage to forest regeneration. Generally, such damage is insignificant except where high-valued commercial forest land reforestation at proper forest stocking levels is a requirement. Added reforestation cost would result if grazing use were allowed in these stands. Suspension of grazing or fencing in reforestation areas could reduce potential impacts.

Seeding and fertilizing on forest land to promote understory browse species would create added competition for moisture and nutrients, potentially reducing forest growth. The impact is considered insignificant.

Restricting motorized vehicle travel in forested big game crucial winter ranges and during elk calving season could increase logging costs and possibly lower timber sales receipts. These added costs could be reduced by extending contract periods to compensate for expected lost harvest time, thus reducing the impacts significantly.

Impacts from Recreation Resource Management. Designating the Thompson Creek area as a natural environment area and prohibiting harvesting within Deep Creek Canyon would reduce the forest land base by 560 acres and 80 acres, respectively. This loss would be insignificant because the forest land consists of marginal volumes per acre and the stands are not readily accessible.

Designation of recreation sites would result in a loss of 25 acres of forest land. This loss also would be insignificant. Alternative harvest methods might need to be implemented adjacent to such recreation sites; however, the few acres impacted would have an insignificant impact on the forest management program.

The designation of approximately 15,500 acres for semi-primitive non-motorized recreation throughout the resource area would have a minor negative effect on the forestry program. On Sunlight Peak, restrictions placed on harvesting and road building

would make harvesting economically marginal on 1,960 acres.

Restrictions on road construction in forest areas designated semi-primitive motorized would increase harvesting costs and potentially reduce timber sale receipts. The overall impact likely would be minor.

Designating Hack Lake as a recreation management area would reduce the forest base by approximately 3,456 acres. Of this lost acreage, 1,800 acres are commercial forest land supporting an estimated 9.3 million board-feet of spruce-fir and 1,656 acres are noncommercial forest land supporting aspen. Loss of acreage and volume from the forest base would be considerable. However, the lack of physical access to the area creates a marginal forest sales program for Hack Lake, thus reducing the significance of this adverse impact.

Impacts from Wilderness Resource Management. Wilderness designations of Eagle Mountain (190 acres of forest land), Hack Lake (10 acres of forest land), and Bull Gulch (1,480 acres of forest land) would reduce the forest land base and management opportunities by 1,680 acres. The impacts of these designations on forestry would be insignificant because these forest lands are inaccessible and have marginal volumes per acre.

Impacts from Visual Resource Management. The designations of Bull Gulch, Thompson Creek, and Deep Creek as visual resource management (VRM) Class I areas would result in a loss of 2,120 acres of forest land. This loss would be minimal as most of this forest is unsuitable for management.

VRM Class II designations would affect 35 percent of the forest land. The impact would be moderate as stipulations placed on harvesting in these Class II areas would increase logging costs and decrease timber sale revenues.

VRM Class III designations would affect 25 percent of the forest land. The impacts would be slight as stipulations placed on harvesting would be minor under this class.

Impacts from Land Tenure Adjustments. Disposal zones would affect 2,650 acres of forest land. Approximately 850 acres of pinyon-juniper and 1,800 acres of commercial forest land species would be lost through disposal. The overall effect would be minimal; however, loss of opportunities to harvest forest or woodland products might be significant locally.

Impacts from Off-Road Vehicle Management. Off-road vehicle (ORV) limitations proposed by critical watershed, recreation and wildlife management could impact forest management to a moderate degree. An estimated 2,500 acres could be affected by ORV limitations. Limitations could increase the already major problem of limited access to public land, especially important to the fuelwood sale program. Closing roads or limiting use to existing or designated roads and trails would slightly affect fuelwood collection. Such limitations, however, would help control wood trespass.

Seasonal limitations (see Impacts from Wildlife Habitat Management) would affect forest product sales as well as harvesting times and sale receipts. These impacts would have the greatest impacts on commercial fuelwood cutters.

Impacts from Transportation Management. Any development of roads (upgrading, new construction, easement acquisitions) would greatly benefit forest management by reducing the cost of timber sales and administrative work in the forest management program.

Impacts from Fire Management. Managing fires within fire management areas would reduce forest fuels and competitive vegetation thereby increasing forest growth and productivity. In fire exclusion areas with forest resources, the forest would be provided with a certain degree of insurance against major disasters. Buildups of forest fuels in these areas are inevitable, however.

Cumulative Impacts on Forestry

By intensively managing forest lands, forest productivity and revenues would increase. Overall health and vigor of stands would be improved, and disease and insect problems would generally be reduced. In the long term (200 or more years for commercial forest land), the annual allowable harvest would increase.

Approximately 100,375 acres of forest land or 39 percent of the total existing resource area forest base would be managed. This management would provide an annual allowable harvest of 1.8 million board feet of timber and could provide as much as 6,465 cords of fuelwood annually. This annual harvest rate is expected to meet or exceed the demand for wood products for the next 10 years.

Impacts on Recreation Resources

Impacts from Proposed Management Actions

Impacts from Recreation Resource Management. Because existing recreation opportunity spectrum (ROS) settings and recreational opportunities would be maintained on approximately 495,526 acres (88 percent of the resource area), a variety of settings would remain available.

All primitive and semi-primitive non-motorized ROS settings (18,490 acres) would be protected by off-road vehicle (ORV) closures and limitations that would prevent conflicts between non-motorized and motorized uses. The closure in the Hack Lake area would have a minor adverse impact because it would preclude the existing small amount of trail-bike use presently occurring on the Ute Trail.

Designation of the Thompson Creek Natural Environment Area (4,286 acres); identification of three recreation management areas in Deep Creek (2,470 acres), Hack Lake (3,456 acres), and Bull Gulch (10,214 acres); and the restrictions on mineral exploration and development in these four areas would protect recreation resource values and ROS settings.

Maintenance of existing recreational facilities would prevent deterioration of these sites. The development of 23 additional facilities would accommodate existing and expected future recreational use occurring in these areas, prevent deterioration of the sites caused by increased use, and reduce visitor safety and health problems.

Changing 16,577 acres of existing semi-primitive non-motorized classes to semi-primitive motorized classes would have low adverse impacts. Although these changes represent a substantial reduction of scarce semi-primitive non-motorized recreational opportunities on public land, the significance is reduced because of the local supply of this setting on national forest lands and because user preferences for hunting and hiking, the major activities in the affected areas, are equal for semi-primitive non-motorized and semi-primitive motorized settings. In addition, limiting ORV use to designated roads and trails on 20,078 acres on Castle Peak would maintain opportunities for non-motorized recreation.

Impacts from Water Quality Management. Improvement in water quality would benefit aquatic habitat by decreasing sedimentation and salinity. The effects of aquatic habitat improvement on recreation are discussed in Impacts from Aquatic Habitat Management.

Impacts from Critical Watershed Areas. ORV limitations on 63,184 acres in critical watershed areas would have adverse impacts on motorcycle and four-wheel drive use. Although the affected areas are generally near population centers, the overall adverse effect is insignificant because ORV use on public land is a very small percentage of the total use in the region and the limitations do not close the areas to ORV use.

Impacts from Aquatic Habitat Management. Habitat improvement of 60 miles of streams in the resource area would increase fish populations and could enhance fishing opportunities by increasing the fishing success ratio. However, the effect cannot be quantified since fishing success is only one of several factors that affect a fishing experience.

Habitat improvements on Hack Lake would protect populations of the state listed threatened Colorado River cutthroat trout, one of the resource values identified within the proposed Hack Lake recreation management area.

Impacts from Terrestrial Habitat, Livestock Grazing, and Forest Management. Vegetation manipulations proposed by terrestrial habitat management, livestock grazing management, and forest management would cause concentrations of vegetation and surface disturbances that would be inconsistent with management objectives for existing semi-primitive non-motorized and semi-primitive motorized ROS classes and result in changes, respectively, to the semi-primitive motorized and roaded natural classes. The impacts are quantified in the cumulative impacts section.

Manipulating 1,844 acres of vegetation per year would increase big game habitat and populations and could enhance hunting opportunities by increasing the hunting success ratio. However, the effect cannot be quantified since hunting success is only one of several factors that affect a hunting experience.

Prohibiting snowmobile use during certain times of the year would have low adverse impacts in most of the resource area and low to moderate impacts in the areas south of Parachute and Rifle and in the Basalt Mountain area. The impacts on these areas would be more significant because access across public land to adjacent national forest land where most of the snowmobile use occurs would be reduced. The impacts of the limitations on motorcycle and four-wheel drive use would be minimal since use would be allowed on existing roads and trails.

Impacts from Wilderness Resource Management. Wilderness designation of 10,118 acres in the Eagle Mountain, Hack Lake, and Bull Gulch Wilderness Study Areas would maintain existing ROS settings and recreational opportunities in these areas and provide additional wilderness recreation opportunities in the region.

Impacts from Visual Resource Management. Designation of 9,184 acres in Deep Creek and Bull Gulch as areas of critical environmental concern (ACECs) and management of these two areas and the Thompson Creek Natural Environment Area (4,286 acres) under visual resource management (VRM) Class I objectives would provide additional protection for their primitive and semi-primitive non-motorized settings and fragile and unique resource

values. VRM Class II objectives would protect semi-primitive non-motorized settings in Hack Lake and the 2,452 acres of the Bull Gulch area outside of the proposed ACEC.

Impacts from Land Tenure Adjustments. The proposed disposals would have minimal to low adverse impacts on dispersed recreational opportunities, mainly hunting, because most of the tracts are small and many are currently inaccessible to the general public.

Impacts from Transportation Management. Obtaining legal access to inaccessible public land would accommodate existing levels of recreation use and expected recreation demand for all recreational activities. Increased access would result in moderate to high increases in visitor use throughout the resource area. Acquisition of private land on the upper Colorado River near Twin Bridges would allow the development of a river access site that would accommodate existing and future levels of floatboating use and reduce trespass problems on private land.

Impacts from Utility and Communication Facility Management. The unsuitable and sensitive zoning classifications would help protect all developed recreation sites, all primitive and semi-primitive non-motorized ROS classes, the proposed Thompson Creek Natural Environment Area, and the entire upper Colorado River corridor between State Bridge and Dotsero by either precluding construction of such facilities or identifying areas where restrictive stipulations would be applied to reduce the impacts.

Impacts from Fire Management. Including all developed recreation sites in the fire exclusion zones would help protect the sites from wildfire and decrease fire hazards to recreational users.

Cumulative Impacts on Recreation Resources

Existing ROS settings and recreational opportunities would be maintained on approximately 88 percent of the resource area. Thus, a variety of opportunities would remain available.

Concentrations of vegetation manipulations and timber harvesting would cause changes in 16,577 acres from the existing semi-primitive non-motorized class to semi-primitive motorized and 53,939 acres from existing semi-primitive motorized to roaded natural. Additional impacts to the physical settings could occur since any future proposals would be subject to the less restrictive objectives of the proposed classes. The overall effects would be low as approximately 17,768 acres in the resource area would remain in the semi-primitive non-motorized class and approximately 276,713 acres would remain in the semi-primitive motorized class. Thus, ample supplies of semi-primitive non-motorized and motorized settings would remain available in the resource area and the region. A variety of recreational opportunities would also be available.

Changes of existing semi-primitive non-motorized classes to semi-primitive motorized would cause a loss of 16,577 acres of scarce semi-primitive non-motorized recreation opportunities. However, the overall adverse affect would be low because of the local supply of this setting on national forest land and because user preferences for the major activities which occur in the affected areas are equal for semi-primitive non-motorized and semi-primitive motorized settings.

Identification of recreation management areas, ORV closures and limitations, mineral restrictions, VRM objectives, designation of the natural environment area and ACECs, and zoning for utility and communication facilities would protect primitive and semi-primitive non-motorized ROS classes and unique and fragile resource values in Thompson Creek, Deep Creek, Hack Lake, and Bull Gulch.

Maintenance of existing developed recreational facilities would prevent deterioration of these sites. The development of 23 additional facilities would accommodate existing and expected future recreational use in high use areas and would prevent deterioration caused by this use. Acquisition of legal access to currently inaccessible public land would provide for future recreation demands for all activities. The access acquisitions would result in moderate to high increases in recreational use throughout the resource area.

Impacts on Social and Economic Conditions

All resource recommendations were evaluated for social and economic impacts. Only those determined to be of potential social and economic significance to individuals, groups, communities, or the resource area are discussed here. Economic impacts were quantified unless they were too small to be measured, were of indeterminate size, or had no acceptable economic measures available.

Impacts from Proposed Management Actions

Impacts from Water Quality Management. Efforts to monitor and address water quality problems might have some marginal economic and social impact. The quality of recreation use of water might

be improved, and water treatment costs could be slightly lowered.

Impacts from Water Yield Management. Demand for water locally and throughout the western United States promises to continue to grow. An increase in water yield of 700 to 3,440 acre-feet, equivalent to about 1½ percent of annual use in the upper Colorado River drainage, would yield minor positive economic and social benefits.

Impacts from Critical Watershed Areas. Municipal watershed protection could result in lower water treatment costs. Reduced debris flow would prevent property loss or damage to private landowners. Off-road restrictions in erosion hazard areas would reduce sediment yield and prolong the useful life of downstream retention or diversion structures resulting in marginal economic benefits.

Impacts From Aquatic Habitat Management. Improved aquatic habitat and higher fish populations would increase the probability of catching fish which would improve the quality of the fishing experience with positive social and economic results.

Livestock Grazing Management. Table 5-8 shows the estimated economic impacts of forage allocation proposals. The net effect of the initial forage allocations would be minimal, the addition of 1,017 animal-unit months (AUMs) generating only small increases in gross and net revenue. The effect on individual ranching operations could be significant, though. Pending monitoring, 77 operators would receive allocation reductions totaling 6,037 AUMs while 80 operators would receive a total increase of 7,054 AUMs.

Table 5-8. Income Effects of Changes in Forage Allocation

	Number of Ranches	Change in Forage Allocation (AUMs)		Change in Gross Revenue (dollars)		Change in Net Revenue (dollars)	
		Total	Average	Total	Average	Total	Average
Initial Allocation							
Reductions	77	−6,037	−78	−189,465	−2,461	−113,569	−1,475
Increases	80	+7,054	+88	+217,223	+2,715	+129,396	+1,617
Net	157	+1,017	+6	+27,758	+177	+15,827	+101
Potential Allocation							
Reductions	33	−1,221	−37	−36,789	−1,115	−21,550	−653
Increases	120	+14,106	+118	+496,404	+3,912	+292,546	+2,438
Net	153	+12,884	+84	+432,615	+2,828	+270,996	+1,771

The methodology used to assess the income effects of changes in forage allocation does not enable the evaluation of specific ranching operations. However, estimated changes in average net revenue (personal income) by ranch size suggest that several ranches would be significantly affected (see Appendix J, Table 4, DEIS). Average net revenue changes for mid-size cattle ranches range from a drop of $1,475 per ranch (a 13 percent reduction) to an increase of $1,617 per ranch (a 15 percent increase). To the extent that individual operations would be economically affected, their social well-being and quality of life would also be affected.

Any adverse impacts would be mitigated by several factors. No forage allocation changes would take place until monitoring had verified the need for such changes. The implementation period (5 years) would provide an opportunity to restructure a ranching operation or to find alternate sources of forage and income, thus avoiding the full impact of any forage reductions.

In addition, forage improvement projects in the long term would provide a considerable increase in livestock forage to two thirds of area ranches. Successful implementation of proposed projects would increase livestock forage by 13,466 AUMs, a 36 percent increase, stimulating a 2 percent increase in gross revenue and a 17 percent increase in average net revenue.

Impacts from Terrestrial Habitat Management. Forage allocated to big game would be increased in the long term by 16.6 percent. However, some big game forage would be lost due to residential and commercial development of private land and public land that had been disposed of. The net effect would be a long-term increase of 9 percent in big game forage availability on public land.

The increase would translate into directly proportional growth in deer and elk populations and in recreational uses associated with big game. Local expenditures in support of big game recreational activities would grow $1.3 million from the current

$14.8 million—an 8 percent increase. Employment would increase by 137 man-years and personal income would grow by $1.0 million. Although this is less than 1 percent of the area's total personal income, it could be significant because much of the growth would take place in the fall, a traditionally slow economic period. Moreover, the changes would be focused on that business sector which relies on hunting and other big game-related recreational activities.

Access recommendations under this proposal could result in some increase in hunter use of public land. To the extent this encouraged more hunting activity in the resource area, economic benefits would accrue. Most of the use would simply be movement from other parts of the resource area, however. Access to or through public land would also diminish somewhat the income of those who charge gate fees for access through their property.

The social well-being and quality of life of some area residents could be postively affected due to higher income and the marginally increased ease with which big game recreational activities could be pursued.

Impacts from Forest Management. Recommendations would provide 1.8 million board feet of sawtimber and 6,465 cords of fuelwood annually. Half of the fuelwood (3,200 cords) would be resold by commercial cutters, and all of the timber would be manufactured and sold as lumber, together generating annual sales of $998,000. This is about 10 percent of current wood product sales generated in the area by BLM and the U. S. Forest Service. This could result in direct and induced growth in personal income of $377,000, 35 man-years of employment, and $103,000 of annual federal revene.

The sale of the remaining 3,200 cords of fuelwood to the public for private use would not generate local economic activity. However, it would help offset residential energy costs and provide friends and family an opportunity to recreate and socialize.

Impacts from Recreation Resource Management. The local economic and social impacts of recreation management activities would be minimal. An increase in the number of recreational facilities would improve the quality and hence the value of recreational experiences. Designation of the Hack Lake Recreation Management Area would remove 9.3 million board feet of commercial timber from available supply; however, the economic impact of that lost supply would be minimal.

Impacts from Wilderness Resource Management. An insignificant quantity of commercial timber in the Bull Gulch WSA could be removed from the area's timber supply with no economic impact. Only low mineral values would be affected with no economic impact. Therefore, any net change in the amount of recreation use in the resource area would be unlikely. Hence, no social or economic impact due to changes in recreation use would occur. The potential for increasing livestock forage in suitable wilderness areas would be reduced by limitations on vegetation manipulation, but the economic impacts would be minimal.

Impacts from Land Tenure Adjustments. Approximately 15,500 acres would be added to the private land base in the resource area, an increase of about 2.1 percent. This increase in the supply of available land could have a downward effect on the price of other undeveloped land, particularly on nearby properties. Such an effect would benefit potential buyers, but would adversely affect landowners.

An increase in BLM administrative costs would be required to process land sale proposals. However, clarification of the disposal status of public land in the resource area would reduce costs for both BLM and applicants.

Federal sales revenue could be up to $11 million, based on estimated sales prices ranging from $200 to $1,000 per acre. Local jurisdictions would benefit from increased property tax revenues, although their administrative costs would increase by additions to the private land base. However, receipts from sales would go to the federal treasury.

The proposed sale tracts include 7,306 acres of crucial big game winter range. The average value of such land in the resource area has been estimated at $176 to $725 per acre of crucial winter range (see Existing Management Situation, Wildlife, available for review at the Glenwood Springs Resource Area office). If, after disposal, that land were developed and lost forage were not replaced, adverse economic impacts would be felt. The economic analysis of the terrestrial habitat management proposals assumes such a loss.

The tracts also include land with approximately 1,600 AUMs of livestock forage which could be transferred to private ownership and potentially lost as productive rangeland.

Impacts from Utility and Communication Facility Management. Designation of zones to guide placement of utility and communication facilities could have beneficial economic impacts by reducing administrative and processing time and costs for both BLM and applicants.

Cumulative Impacts on Social and Economic Conditions

Table 5-9 shows the cumulative annual impacts of proposed management actions on personal income and employment. Net changes for both are minimal, about ½ of 1 percent of the resource area totals, but individuals or certain groups might be significantly affected. Other proposed management actions would not have measurable economic impacts. Area population and the provision of public and social services would be unaffected.

None of the proposed management actions under the Proposed Plan would significantly affect population, the overall economy, or the quality of life and social well-being factors identified in the Affected Environment as important in this area. However, the quality of life and social well-being of a small group of individuals would be adversely impacted as a result of the livestock grazing and terrestrial habitat management proposals.

Table 5-9. Cumulative Impacts on Personal Income and Employment

Management Activity	Change Agent	Change in Personal Income ($1,000)	Change in Employment (man-years)
Livestock Grazing	+1,017 AUMs	+35	
Wildlife Forage	+9 percent (AUMs)	+960	+137
Forest Land	+5,033*	+377	+35
Net Change		+1,372	+172

*in thousand board feet

The impacts from terrestrial habitat and forest management would endure over the long term. The livestock grazing management impacts are short term but were included because short-term forage allocation decisions might be decisive to individual ranches.

Social well-being and quality of life are unlikely to be significantly affected by proposals under the Proposed Plan.

Impacts on Cultural Resources

Impacts from Proposed Management Actions

Impacts from Cultural Resource Management. Designation of the Blue Hill Archaeological District as an area of critical environmental concern and nomination to the ***National Register of Historic Places*** would help protect significant cultural resources and provide additional information about the prehistoric cultures.

Actively managing high value cultural sites would substantially decrease the number of sites lost and would slow or prevent deterioration of the values present. Establishing and maintaining accurate and complete data about these sites would also significantly add to our knowledge of these past cultures.

Cultural resource inventories conducted for all surface-disturbing activities would result in increased information about the local cultural resources and thus contribute to our knowledge of the past.

No significant adverse impacts would occur from managing high value sites or from protecting the Blue Hill Archaeological District.

Impacts from Livestock Grazing Management. Livestock grazing would result in cultural resource loss or damage as a result of livestock trampling and rubbing. However, present information indicates these impacts would be insignificant because most sites are not susceptible to these impacts.

Cumulative Impacts on Cultural Resources

Cumulative impacts would be the same as those presented under Proposed Management Actions.

Impacts on Paleontological Resources

Impacts from Proposed Management Actions

Proposed management actions would not adversely affect paleontological resources. Required paleontological resource clearances in areas with a high probability of fossil occurrence would prevent the accidental destruction of fossils present.

Required paleontological resource clearances could result in beneficial impacts. Information would be collected about local paleontological resources. However, little information would be collected as a direct result of implementation of this plan as few projects are proposed in high occurrence areas.

Cumulative Impacts on Paleontological Resources

Cumulative impacts would be the same as those presented under Proposed Management Actions.

Impacts on Wilderness Values

Impacts from Proposed Management Actions

Impacts from Wilderness Resource Management. Designating the entire Eagle Mountain Wilderness Study Area (WSA) (330 acres) and portions of the Hack Lake (10 acres) and Bull Gulch (9,778 acres) WSAs as wilderness would protect wilderness values and permit the natural ecological processes to continue. Protecting the wilderness values would in turn benefit related supplemental values such as wildlife, geological, ecological, and scenic values.

Diversity in the local wilderness supply would increase as a result of the designation of the Bull Gulch WSA because its ecosystem type is not locally represented.

Transferring administration of the entire Eagle Mountain WSA and the suitable portion of the Hack Lake WSA to the U. S. Forest Service would provide consistent management with the existing adjacent wildernesses.

Wilderness values would be adversely affected by nondesignation of the 19,876 acres recommended as nonsuitable since the areas could be open to development of other resources. These impacts are discussed as follows by resource activity and in the cumulative impacts section.

Estimates indicate recreational use of the areas recommended as suitable would be less than 1 percent of the total use locally in the year 2000. Thus, designation of these areas would not be significant in meeting future wilderness demand.

Impacts from Aquatic Habitat Management. Habitat improvement at Hack Lake would protect habitat for the Colorado River cutthroat trout, a state threatened species and one of the supplemental values of the Hack Lake WSA.

Impacts from Forest Management. Timber management in the Castle Peak WSA and on 4,586 acres of the Bull Gulch WSA would impair the naturalness of these areas. Human activities and noise associated with timber harvesting would also reduce opportunities for solitude.

Impacts from Recreation Resource Management. The off-road vehicle (ORV) closure and long-term management under objectives for the semi-primitive non-motorized class would maintain primitive recreational opportunities in 3,108 acres of the nonsuitable portion of the Hack Lake WSA. The no surface facilities stipulation on oil and gas leasing in this semi-primitive non-motorized zone would also provide protection of the area's natural character. The ORV closure and management under semi-primitive non-motorized objectives would help maintain primitive recreational opportunities in the suitable portion of the Bull Gulch WSA; however, motorized use would be prohibited regardless upon designation.

The ORV limitation on Castle Peak would maintain primitive recreational opportunities since use would be limited mainly to designated roads east of the WSA.

The remaining 4,586 acres of the Bull Gulch WSA which would be open to ORV use could conflict with and reduce opportunities for primitive types of recreation.

Impacts from Visual Resource Management. Designation of 6,077 acres within the suitable portion of the Bull Gulch WSA as an ACEC and management under visual resource management (VRM) Class I objectives would provide additional protection of the area's visual quality. However, all of the suitable areas would be managed under Class I objectives upon wilderness designation. All of the nonsuitable portion of the Hack Lake WSA and 9,314 acres of the Castle Peak WSA would be managed under VRM Class II objectives, which would protect their visual qualities. Visual quality could be degraded in the nonsuitable portion of the Bull Gulch WSA and the remaining 2,626 acres of the Castle Peak WSA because of the less restrictive VRM Class III and Class IV objectives.

Impacts from Utility and Communication Facility Management. Zoning all of the Eagle Mountain and Hack Lake WSAs and the suitable portion of the Bull Gulch WSA as unsuitable for utility and communication facilities would help protect the naturalness of the areas. Zoning all of the Castle Peak WSA and the remainder of the Bull Gulch WSA as sensitive for such facilities would not eliminate, but could reduce, impacts on naturalness.

Cumulative Impacts on Wilderness Values

Wilderness values would be preserved in 10,118 acres in the Eagle Mountain, Hack Lake, and Bull Gulch WSAs. Preservation of wilderness values would in turn protect related supplemental values including wildlife, geological, ecological, and scenic values. Diversity in the local wilderness supply would be increased by designation of the suitable portion of the Bull Gulch WSA since its ecosystem type is not currently represented locally.

Wilderness values would be adversely affected by non-designation on the 19,876 acres recommended as nonsuitable. These adverse impacts would be low on approximately 3,350 acres, but wilderness values would likely be lost on 16,526 acres. The impacts would be minimal in the Hack

Lake WSA as a no surface facilities stipulation on mineral leasing, unsuitable designation for utilities, off-road vehicle closure, prohibition on timber harvesting, and the management objectives for the semi-primitive non-motorized class would provide protection of the area's natural character and opportunities for solitude and primitive recreation. Naturalness in the remaining 4,586 acres of the Bull Gulch WSA would likely be impaired because of timber management and vegetation manipulation for wildlife and livestock. Adverse impacts would be most significant in the Castle Peak WSA since timber management would impair naturalness in the entire WSA. Limiting ORV use to designated roads and trails in the Castle Peak WSA would maintain some opportunities for primitive recreation and solitude.

Impacts on Visual Resources

Impacts from Proposed Management Actions

Impacts from Visual Resource Management. Visual quality on approximately 519,345 acres (92 percent) of the resource area would be maintained. Designation of Deep Creek (2,470 acres) and Bull Gulch (6,714 acres) as areas of critical environmental concern (ACECs) and management of both areas and the Thompson Creek Natural Environment Area under visual resource management (VRM) Class I objectives would protect the visual qualities of these areas.

Managing 1,365 acres in the Parachute Creek area under Class IV objectives instead of Class III objectives would have minimal impacts because of the small acreage involved and the impact on the area of adjacent land uses (oil shale development).

Impacts from Wildlife Habitat, Livestock Grazing, and Forest Management. Vegetation manipulations proposed in some areas by terrestrial habitat, livestock grazing, and timber management would cause concentrations of vegetation and surface disturbances that would be inconsistent with VRM Class II objectives and result in changes to Class III. The impacts are quantified in the cumulative impacts section.

Impacts from Critical Watershed Areas. The off-road vehicle (ORV) limitations on 63,184 acres would help maintain visual quality in the restricted areas by reducing degradation from ORVs. The debris flow area near Glenwood Springs and the ORV areas near Gypsum and Eagle would be the most significant since these areas are within the viewshed of Interstate 70.

Impacts from Recreation Resource Management. Management objectives for the primitive and semi-primitive nonmotorized recreation opportunity spectrum (ROS) classes would help maintain visual quality. Thompson Creek, the two proposed ACECs in Deep Creek and Bull Gulch, and Class A scenic quality area on Hack Lake are within these ROS classes. ORV closures in the above areas would also help maintain visual quality.

Impacts from Wilderness Resource Management. Designation of 10,118 acres as wilderness would maintain the visual quality of the areas in a natural state. Designation of the suitable portion of the Bull Gulch WSA would help protect the visual quality of 6,077 acres of the proposed ACEC.

Impacts from Utility and Communication Facility Management. The unsuitable classifications would protect visual quality by precluding construction of utility and communication facilities. The two proposed ACECs (9,184 acres) and Thompson Creek (4,286 acres) are included in this classification. The sensitive classification would protect visual quality by identifying areas where restrictive stipulations would be applied to mitigate the impacts of such facilities in conformance with VRM objectives.

Cumulative Impacts on Visual Resources

Visual quality of approximately 92 percent of the resource area would be maintained. Designation of Deep Creek and Bull Gulch as ACECs and management of both areas and the Thompson Creek Natural Environment Area under VRM Class I objectives would help protect these areas' visual qualities.

Changing 45,332 acres of tentative VRM Class II to Class III would degrade the visual quality in these areas by concentrations of vegetation manipulations and timber harvesting. Changing an additional 1,365 acres of tentative Class III to Class IV would allow degradation of the visual qualities of these areas. Visual quality could be further degraded on the total 46,697 acres which would be managed under lower VRM objectives since any future proposals would also be subject to the less restrictive objectives. The overall detrimental effects would be low as the changes generally occur outside of the foregrounds of major viewsheds.

Impacts on Transportation

Impacts from Proposed Management Actions

Providing 41 miles of additional public roads, 48 miles of additional public trails, and acquiring 48 new easements should satisfy most demands for access by the public and BLM.

The Proposed Plan would provide greater access to public land. Traffic on roads and trails would increase as public access increased and road conditions improved. Increased access could potentially increase vandalism, littering, and off-road vehicle damage. Increased traffic would increase maintenance and maintenance expenditures.

The Proposed Plan would provide better quality roads. Additional access would provide many important resource programs with two points of access which would spread out use and provide alternate ingress and egress in poor weather. This would help to prevent degradation to the transportation system.

Improved access would help the various resource programs accomplish their management objectives.

Cumulative Impacts on Transportation

Cumulative impacts would be the same as those discussed under Impacts from Proposed Management Actions.

SHORT-TERM USE VERSUS LONG-TERM PRODUCTIVITY

For analysis purposes, *short term* refers to the period of implementation of the plan within about 10 years, and *long term* refers to the period 20 years or beyond in which the proposals' adverse or beneficial impacts would still occur.

Soils

In the short term, soil loss would increase slightly due to vegetation manipulation proposals to increase forage for livestock and wildlife. Soil loss would also increase slightly in timber and woodland harvest areas. In the long term, improved vegetation production in sagebrush, mountain brush, and pinyon-juniper treatment areas would improve ground cover and reduce soil loss below existing conditions thus providing a long-term net benefit to the soil resource in these areas. In conifer and aspen areas, soil loss in the long term would return to pretreatment or preharvest levels.

Water Resources

Water quality conditions would decline in the short term due to vegetation manipulation, timber and woodland harvest, and other soil-disturbing activities. Mitigation measures and monitoring activities would prevent water quality conditions from violating state water quality standards in areas that currently comply with these standards and from exceeding allowable departure levels for sediment recommended in the *Northwest Colorado Council of Governments' 208 Plan*. In the long term, water quality conditions probably would improve due to increased ground cover and implementation of water quality management plans that would be prepared for water quality management areas identified on Map 3-1.

Minerals

Mineral development would be restricted by withdrawals proposed by water, cultural, recreation, and wilderness resource management. These restrictions would create long-term adverse effects on mineral development. However, due to the limited amount of acreage affected, impacts on exploration or development would be limited.

Terrestrial Wildlife

In the short term, existing big game populations would be maintained and climax-dependent wildlife species would decline. Long-term forage increases would probably bring about a 9 percent increase in big game populations. Increase in wildlife species diversity and numbers would probably be commensurate with increases in habitat diversity achieved through habitat improvements.

Livestock Grazing

In the short term, initial forage allocations of animal-unit months (AUMs) to livestock would be decreased significantly from existing use in the King Mountain Capability Unit. The short-term change from active preference would also be significant for all capability units. These short-term decreases would ensure that long-term productivity would not

be adversely affected. In the long term, through grazing management actions, productivity would be increased over all capability units, though not enough to satisfy everyone's active preference.

Vegetation

In the short term, vegetation would be disturbed on vegetation manipulation areas; timber harvest sites; and mineral, utility and transportation site development locations. However, vegetation production would increase over the long term. Vegetation cover would reestablish on disturbed areas, and plant vigor, forest growth and reproduction, seedling establishment, litter accumulation, and overall vegetation condition would increase.

Recreation Resources

In the short term, recreational activities on public land such as camping, hunting, fishing, and boating would remain constant. In the long term, however, recreational opportunities would be increased through more access, better developed sites, increases in water yield and quality, and increased big game habitat resulting in increased game populations.

Social and Economic Conditions

In the short term, social and economic conditions in the area would not be significantly affected by management proposals under the Proposed Plan. Individual ranching operations, however, could be significantly affected in the short term. Many of those adversely affected in the short term would be economic beneficiaries in the long term because of improved livestock forage conditions. Forage allocations to wildlife would have primarily long-term effects as deer and elk populations adjust to new forage levels and as expenditures for wildlife-related recreation adjust to the new population levels. Increases in sales of forest land products would produce long-term economic benefits by assuring a lasting supply of improved quality timber.

Cultural Resources

In the short term, cultural resources could benefit because the increased project work would create the need for cultural inventories and clearances on the land to be affected by the projects. The Blue Hill Archaeological District and identified high-value sites would benefit in the short term and long term. All other long-term effects to cultural resources would be insignificant.

Wilderness Values

In the short and long term, any wilderness designation within existing wilderness study areas would restrict potential productivity of mineral development, timber harvesting, motorized recreational opportunity, or any other use restricted in wilderness areas.

Visual Resources

Over the short term, vegetation manipulations; timber harvesting; and energy, utility, and transportation development would create some visual intrusions. In the long term, revegetation of manipulated and harvested areas would lessen the visual impacts, resulting in little loss of the visual quality to the resource area. Areas affected by energy, utility, or transportation development would create visual intrusions, but long-term impacts on the visual resources would be reduced if projects were constructed in harmony with the natural environment.

IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES

This section identifies the extent to which the Proposed Plan would irreversibly limit potential uses of the land and resources. Irreversible and irretrievable commitments of resources occur when a wide range of future options are foreclosed.

Soils

Minor soil loss would be irretrievably committed in areas of vegetation treatment, timber and fuelwood harvest, and other soil-disturbing activities.

Minerals

The designation of existing wilderness study areas for wilderness would result in the loss of mineral development in those areas, except where valid existing rights exist. However, should a national emergency arise, any minerals present in those areas could be developed under Congressional approval.

Terrestrial Wildlife

Wildlife habitat lost through land tenure proposals, energy development, urban expansion, and project implementation would be irretrievably and irreversibly lost.

Forestry

Wilderness designations on Eagle Mountain, Hack Lake, and Bull Gulch would result in the irreversible and irretrievable loss of harvest potential in these areas.

Recreation Resources

The designation of existing wilderness study areas for wilderness would result in the irreversible and irretrievable loss of motorized recreation opportunities in those areas. Changes of recreation opportunity spectrum classes toward the facility dependent end of the spectrum (semi-primitive motorized to roaded natural) would result in irreversible and irretrievable losses of the resource-dependent recreational experience opportunities in the affected areas. Loss of recreation opportunities are tied to the loss of big game wildlife habitat. Loss of habitat would result in a permanent loss of hunting opportunities.

Wilderness Values

The development of other resources such as timber harvesting and vegetation manipulations in nonsuitable portions of wilderness study areas would result in an irreversible and irretrievable loss of wilderness values in those areas.

Land Tenure

Disposal of public land would result in an irreversible and irretrievable loss of administrative control and public use for all resource values except mineral values on those parcels.

CHAPTER 6

DOCUMENT PREPARATION, CONSULTATION, AND COORDINATION

CHAPTER 6

DOCUMENT PREPARATION, CONSULTATION, AND COORDINATION

DOCUMENT PREPARATION

This final environmental impact statement was prepared by an interdisciplinary team of natural resource specialists, an economist, a sociologist, an editor, an illustrator, and a clerk. Table 6-1 lists the names and qualifications of these team members.

CONSULTATION AND COORDINATION

In Preparation of the DEIS

During preparation of the planning documents and draft environmental impact statement, federal, state, county and local agencies were contacted to gain information and close data gaps. These agencies are listed in the DEIS, Chapter 1, Interrelationships section.

To keep the public informed and to solicit comments on the planning progress, newsletters were published in February 1980, August 1980, August 1981, and April 1982. Over 1,000 copies were mailed to various agencies and individuals who requested information on the Glenwood Springs Resource Management Plan.

In addition to the newsletters, public workshops were held in November and December 1979 and in May 1982. The workshops in 1979 were held to give interested agencies and citizens an opportunity to voice their concerns and identify issues for consideration in the resource management plan. The May workshops were held to present and receive comments on the Continuation of Current Management, Resource Protection, and Economic Development Alternatives.

News releases and two ***Federal Register*** notices concerning the resource management plan were also published during the planning process in addition to the many news broadcasts.

In Preparation of the FEIS

The DEIS was filed with the Environmental Protection Agency on October 29, 1982. The notice of availability and a public hearing announcement were published on November 5, 1982, in the *Federal Register.* The notice announced a 90-day comment period ending February 2, 1983.

Over 500 copies of the DEIS were mailed to federal, state, and local governments, private groups and organizations, and individuals for review and comment. News releases provided information on how to obtain copies of the DEIS and where to review it. Formal public hearings were held in Glenwood Springs, Grand Junction, and Denver on December 7, 8, and 14, respectively. A BLM official presided over each hearing, and three BLM representatives served on the panel. A court reporter recorded the hearings verbatim.

Comments on the DEIS were requested from the following agencies and interest groups. Those who responded are indicated by asterisks.

Federal Agencies

Department of the Interior
- Bureau of Reclamation
- *Fish and Wildlife Service
- Geological Survey
- *National Park Service
- Office of Surface Mining

Department of Agriculture
- *Forest Service
- Soil Conservation Service

Department of Energy

*Environmental Protection Agency

Colorado State Agencies

*Colorado Division of Planning-State Clearinghouse (Distributes to State Agencies)

Table 6-1. Final Environmental Impact Statement Team

Name	Position	Qualifications
Alfred W. Wright	Project Manager	B.S. Agriculture, BLM—10½ years area manager, 6 years natural resource specialist
David B. Mensing	Team Leader	B.S. Outdoor Recreation Resources, M.A. Geography, BLM—3 years team leader, 7 years outdoor recreation planner
Joann Graham	Editor	BLM—5½ years technical editor, USFS—3 years administrative assistant, DOD—10 years secretary/editorial clerk
Doug Huntington	Planning Coordinator	M.A. Planning, BLM—1½ years planner, OSM—3 years reclamation specialist
James Abbott	Technical Coordinator	B.S. Recreation Administration, BLM—6½ years recreation planner
Grant Loomis	Hydrology and Soils	B.A. Economics, 2 years graduate education in water resources administration. Water Resources Research Center, University of Arizona—1 year, BLM—1½ years hydrologist, 2 years economist
Scott Archer	Air Quality	B.S. Environmental Science and Chemistry, BLM—1½ years air quality specialist, EPA—4½ years consultant
Elizabeth McReynolds	Minerals and Paleontology	B.S. Geology, BLM—3½ years geologist, 1½ years paleontologist
Leonard Coleman	Wildlife	B.S. Wildlife and Range, BLM—7 years wildlife biologist, 2½ years range conservationist
Steve Moore	Economics	M.S. Agricultural Economics, BLM—3½ years economist, U. S. Senate—1 year economist, USDA—4 years economist
Barbara Schmalz	Sociology	M.A. Sociology, BLM—5½ years sociologist, Western Interstate Commission for Higher Education—2 years sociologist
Langley E. Ligon	Vegetation, Livestock Grazing	B.S. Range Management, BLM—9½ years range conservationist
James Byers	Forestry	B.S. Forest Management, BLM—4½ years forester
Rex Wells	Recreation, Visual Resources, Wilderness, Off-Road Vehicles	B.S. Outdoor Recreation, BLM—5½ years outdoor recreation planner
John Crouch	Cultural Resources	B.A. Anthropology, BLM—10½ years archaeologist
Paul R. Williams	Cultural Resources	B.A. Psychology, graduate program in Anthropology, BLM—2 years archaeologist
Don Owen	Land Tenure, Utilities and Communications	B.S. Psychology, graduate program in Natural Resource Planning, BLM—3½ years realty specialist, USFS—3 years civil engineering technician
Roy Johnson	Fire	B.S. Physical Science/Education, BLM—11½ years fire management, USFS—4 years fire management
Jeb Stuart	Transportation	B.S. Wildlife Management, BLM—1½ years realty specialist, USFS—2 years realty specialist, New Mexico GEF—wildlife biologist
Lee Meydrech	Illustrator	BLM—1½ year illustrator, USFS—19 years engineering technician, 3 years cultural resource specialist
Gail Petry	Editorial Clerk/Typist	B.A. Rhetoric, BLM—1 year

Local Government

Associated Governments of Northwestern Colorado

*Eagle, *Garfield, Mesa, *Pitkin, Rio Blanco, and Routt County Commissioners and Planning Departments

Cities and Towns of Aspen, Basalt, *Carbondale, DeBeque, Eagle, *Glenwood Springs,

Gypsum, New Castle, Rifle, Parachute, Silt, and Snowmass Village.

Other Organizations

Advisory Council on Historic Preservation

Aspen Board of Realtors

American Petroleum Institute

Club 20

Colorado Association of Soil Conservation Districts

Colorado Association of 4-Wheel Drive Clubs

*Colorado Cattlemen's Association

Colorado Dude and Guest Ranch Association

Colorado Farm Bureau

Colorado Guides and Outfitters Association

*Colorado Mining Association

*Colorado Open Space Council

Colorado School of Mines

Colorado State University

Colorado Wool Growers Association

*Friends of the Earth

Independent Petroleum Association of Mountain States

League of Women Voters

*Mobil Mining and Coal Division

National Audubon Society

*National Wildlife Federation

*Natural Resources Defense Council

*Public Service Company of Colorado

Rocky Mountain Oil and Gas Association

*Sierra Club

Trout Unlimited

University of Colorado

Upper Colorado Board of Realtors

Western Slope Snowmobile Club

*Wilderness Society

*Wildlife Management Institute

CHAPTER 7

PUBLIC COMMENTS

CHAPTER 7

PUBLIC COMMENTS

ANALYSIS AND REVIEW PROCEDURES

A total of 135 interested citizens, federal and state agencies, and private organizations submitted comments on the DEIS. Of this total, 82 submitted comments specifically on wilderness while 63 submitted comments specifically on other resource recommendations. Most of those submitting comments on other resources were concerned with water yield, forestry, wildlife, livestock grazing, recreation, and land tenure. Table 7-1 shows the number of contributors by resource. If a resource is not shown, no comment was received.

Table 7-1. Number of Contributors by Resource

Resource	Number of Contributors[1]
Air Quality Management	1
Water Resources	*15
Minerals Management	6
Aquatic Habitat Management	5
Terrestrial Habitat Management	18
Livestock Grazing Management	18
Vegetation	1
Forest Management	15
Recreation Resource Management	9
Social and Economic Conditions	4
Cultural Resource Management	1
Wilderness Management	**73
Areas of Critical Environmental Concern	4
Visual Resource Management	7
Land Tenure Adjustments	22
Off-Road Vehicle Management	4
Transportation Management	11
Utility and Communication Facility Management	6
Fire Management	3
General	12

[1]These numbers cannot be added to total 135 because many persons who commented on one resource also commented on another.

*In addition to these contributions, others contributed comments on water yield. These comments were received from 2 weeks to a month after the closing of the comment period and, therefore, could not be responded to in this FEIS. They were, however, considered in preparing the FEIS and were sent letters of response.

**In addition to these contributors, 12 others submitted comments that required no response. These comments were either for or against wilderness recommendations.

All written comments and the hearing transcripts will be sent with this FEIS to the Secretary of the Interior and the Environmental Protection Agency. In addition, all wilderness comments will accompany the BLM Colorado State Director's wilderness recommendations to Washington for consideration by the BLM Director, the Secretary of the Interior, the President, and Congress. All comments will be available for inspection at the Glenwood Springs Resource Area and Grand Junction District offices.

COMMENTS AND RESPONSES

All comments were reviewed and considered. Comments that presented new data, questioned facts or analyses, or raised questions or issues bearing directly upon the alternatives or environmental analyses were responded to in this FEIS.

Each letter and each person who testified at the hearings was given an index number (Table 7-2). This index number was used in Table 7-3 to identify the contributor or contributors of a comment.

Arranged by topic in Table 7-3 are the comments and responses. Except for editing of misspelled words or obvious errors in punctuation, most comments are printed verbatim. In many cases, credit for the same comment was given to several contributors under the *Raised by* column. The response to a comment either identifies that a change was made or provides rationale for why it was not changed. Editorial corrections were made either in the text or in the Errata, Appendix L, if appropriate, but were not responded to in Table 7-3.

Appendix M displays the comment letters received from various interest groups; recognized experts; and federal, state, and local agencies. Letters from the other contributors were not printed because of the large number of letters received.

Table 7-2. List of Contributors

Index Number	Individual, Group or Agency	Type of Comment
1	Sunnyvail Angus Ranch, McCoy, Colorado	Written
2	Mary Ellen Reese, Denver, Colorado	Written
3	Colorado Historical Society, Denver, Colorado	Written
4	Glenn E. Gade, M.D., Denver, Colorado	Written
5	Georgie Leighton, Aspen, Colorado	Written
6	Colorado Natural Areas Program, Department of Natural Resources, Denver, Colorado.	Written
7	Dorothy Cohen, Boulder, Colorado	Written
8	Larry Titus, Longmont, Colorado	Written
9	Careline D. Foster, Carbondale, Colorado	Written
10	Margaret Burgess, Denver, Colorado	Written
11	A. Marshall, Denver, Colorado	Written
12	Brian Haas, Eagle, Colorado	Oral
13	Howard Tingley, Carbondale, Colorado	Oral
14	Jack Snobble, Carbondale, Colorado	Oral
15	Barbara Fernandez, Glenwood Springs, Colorado	Oral
16	Elisa Dancing Bird, Glenwood Springs, Colorado	Oral
17	Greg Mason, Glenwood Springs, Colorado	Oral
18	Nick Greear, Carbondale, Colorado	Oral
19	Robert Scarrow, Glenwood Springs, Colorado	Oral
20	Dick Kvach, Planning Director, Avon, Colorado (representing the Town of Avon).	Oral
21	Judith Moffatt, Glenwood Springs, Colorado (representing the Garfield County Citizen's Association).	Oral
22	Steve Durbin, Glenwood Springs, Colorado	Oral and Written
23	Lee Jamieson, Glenwood Springs, Colorado	Oral and Written
24	Frank Benson, Glenwood Springs, Colorado	Oral and Written
25	Michael Weimann, Glenwood Springs, Colorado	Oral and Written
26	Eileen Roth, Glenwood Springs, Colorado	Oral and Written
27	Linda Dvorkis, Glenwood Springs, Colorado	Oral and Written
28	Rain Olander, Glenwood Springs, Colorado	Oral and Written
29	Lynn Cudlip, Grand Junction, Colorado	Oral
30	Jeanne T. Hemphill, Grand Junction, Colorado	Oral
31	Lonnie Renner, Grand Junction, Colorado	Oral
32	C. Albrecht, Grand Junction, Colorado (representing Friends of the Earth).	Oral
33	C. R. Cole, Grand Junction, Colorado	Oral
34	Paul T. Petersen, Grand Junction, Colorado	Oral and Written
35	Paul J. Farley, Dolores, Colorado	Written
36	Sidney Oheres, Boulder, Colorado	Written
37	Bruce M. Stevens, Parachute, Colorado	Written
38	Kurt H. Gerstle, Boulder, Colorado	Written
39	Bruce Berger, Aspen, Colorado	Written
40	Public Service Company of Colorado, Denver, Colorado	Written
41	Mike McCarty, Glenwood Springs, Colorado	Written
42	Alvin Aldrich, Livermore, Colorado	Written
43	Stephen A. Ravworth, Ignacio, Colorado	Written
44	Howard E. Tingley, Carbondale, Colorado	Written
45	Paul Rea, Greeley, Colorado	Written
46	Merrill G. Hastings, McCoy, Colorado	Oral
47	David Bohland, Denver, Colorado	Oral
48	Linda Hall, Denver, Colorado	Oral
49	Dudley Lomer, Englewood, Colorado	Oral
50	Merry Havens, Boulder, Colorado	Oral
51	Steve Arrowsmith, Boulder, Colorado	Oral
52	Richard Ling, Boulder, Colorado (representing the University of Colorado Student Union).	Oral
53	Daryl Anderst, Denver, Colorado	Oral
54	Blake Peterson, Boulder, Colorado	Oral
55	Ellen Armsby, Boulder, Colorado	Oral
56	Sarah Smock, Boulder, Colorado	Oral
57	Steve Smith, Boulder, Colorado (representing the Colorado Open Space Council, Wilderness Committee Chairman).	Oral
58	Sharyl Kinnear, Boulder, Colorado (representing Dr. X)	Oral and Written
59	Mark Pearson, Boulder, Colorado	Oral
60	Jim Morris, Boulder, Colorado	Oral
61	Gerry Rhoades, Denver, Colorado	Oral

Table 7-2. List of Contributors—Continued

Index Number	Individual, Group or Agency	Type of Comment
62	Michael Scott, Denver, Colorado (representing the Wilderness Society, Southwest Representative).	Oral
63	Norm Mullen, Denver, Colorado (representing the Colorado Open Space Council).	Oral
64	Kirk Cunningham, Denver, Colorado (representing the Sierra Club, Rocky Mountain Chapter, Wilderness Committee).	Oral
65	Karen Rhoades, Denver, Colorado	Oral
66	Rosalind McClellan, Boulder, Colorado	Oral
67	Rocky Smith, Denver, Colorado	Oral
68	Robert Kirkegaard, Aurora, Colorado	Oral and Written
69	Alan Lilly, Denver, Colorado	Oral and Written
70	John Domingue, Englewood, Colorado	Written
71	National Council of Public Land Users, Grand Junction, Colorado	Written
72	Paul and Virginia Lappala, Carbondale, Colorado	Written
73	Suzanne H. Kaempfer, Boulder, Colorado	Written
74	Kenneth J. Gamauf, Boulder, Colorado	Written
75	Abel L. Robertson, Jr., M.D., Ph.D., Hinsdale, Illinois	Written
76	Sierra Club, Rocky Mountain Chapter, Denver, Colorado	Written
77	Charla Palmer and Mark Bemer, Steamboat Springs, Colorado	Written
78	James Tonozzi, Glenwood Springs, Colorado	Written
79	Tom Hames, Denver, Colorado	Written
80	Lyn dePagter, Boulder, Colorado	Written
81	Double J Enterprises, Vail, Colorado	Written
82	Ray Fender, Carbondale, Colorado	Written
83	Colorado Natural Areas Program, Department of Natural Resources, Denver, Colorado.	Written
84	Pitkin County, Aspen, Colorado	Written
85	Beverly and Tony Baker, Boulder, Colorado	Written
86	Wildlife Management Institute, Washington, D.C.	Written
87	USDI Fish and Wildlife Service, Area Office, Colorado-Utah, Salt Lake City, Utah.	Written
88	Paul Weis, Arvada, Colorado	Written
89	Perry-Powers Land & Cattle Company, Denver, Colorado	Written
90	City of Glenwood Springs, Colorado	Written
91	Robert E. Schreiner, Jr., Englewood, Colorado	Written
92	Mobil Mining and Coal Division, Denver, Colorado	Written
93	USDI National Park Service, Rocky Mountain Regional Office, Denver, Colorado.	Written
94	U. S. Department of Transportation, Federal Highway Administration, Region 8, Colorado Division, Denver, Colorado.	Written
95	W. R. Jacobsen, Gypsum, Colorado	Written
96	Wesley Schlegel, Burns, Colorado	Written
97	Aspen Pitkin Planning Office, Aspen, Colorado	Written
98	Louisa Stark, Boulder, Colorado	Written
99	Steve Bortz, Boulder, Colorado	Written
100	James D. Peterson, Carbondale, Colorado	Written
101	Dale F. Reed, Glenwood Springs, Colorado	Written
102	The Colorado Mining Association, Denver, Colorado	Written
103	Jan Holt, Boulder, Colorado	Written
104	Rifle Ski Corporation, Rifle, Colorado	Written
105	Benton Land and Livestock Company, Burns, Colorado	Written
106	Sidney M. Wheelock, Burns, Colorado	Written
107	John R. Swanson, Berkely, California	Written
108	Garfield County Board of County Commissioners, Glenwood Springs, Colorado.	Written
109	State of Colorado, Department of Natural Resources	Written
110	The Colorado River and Eagle Company, Eagle, Colorado	Written
111	James B. Breese, Denver, Colorado	Written
112	City of Carbondale, Colorado	Written
113	Davis and Cathie Farrar, Carbondale, Colorado	Written
114	U. S. Forest Service, White River National Forest, Aspen Ranger District, Aspen, Colorado.	Written
115	Aspen Wilderness Workshop, Inc., Aspen, Colorado	Written
116	Gene R. Hilton, Littleton, Colorado	Written
117	Jerry Craghead, Eagle, Colorado	Written
118	USDA Forest Service, White River National Forest, Glenwood Springs, Colorado.	Written

Table 7-2. List of Contributors—Continued

Index Number	Individual, Group or Agency	Type of Comment
119	Carolyn Leuthold, Boulder, Colorado	Written
120	Eagle County Agricultural Landowners Association, Eagle, Colorado	Written
121	University of Northern Colorado, Greely, Colorado	Written
122	David Lucas, Boulder, Colorado	Written
123	W. A. Winkler, Carbondale, Colorado	Written
124	Natural Resources Defense Council, Denver, Colorado	Written
125	Colorado Wilderness Network, Denver, Colorado	Written
126	Union Oil Company of California, Union Energy Mining Division, Grand Junction, Colorado.	Written
127	University of Colorado Wilderness Study Group, Boulder, Colorado	Written
128	Colorado Cattlemen's Association, Denver, Colorado	Written
*129	U. S. Environmental Protection Agency, Region VIII, Denver, Colorado	Written
*130	Linda Kirkegaard, Blair, Nebraska	Written
*131	West Anvil Water and Power Company, Rifle, Colorado	Written
*132	Minerals Exploration Coalition, Denver, Colorado	Written
*133	Eagle County Board of County Commissioners, Eagle, Colorado	Written
*134	Mike Frazier, Craig, Colorado	Written
*135	National Wildlife Federation, Washington, D.C.	Written

*Received after the closing of the comment period but responded to in this FEIS.

Table 7-3. Comments and Responses

Comment	Raised By (index number)	Response
Air Quality Management		
In addition to the considerable socio-economic value to the area of high air quality, BLM must consider the impact of decreased air quality on three adjacent *Class I air quality areas—as required by 43 CFR* 1601.0-8(j) and 1601.4-3(a). Strict limitations exist on additional amounts of pollution allowable in these areas. Although the DEIS acknowledges that "BLM must consider these limitations when air quality impacts are anticipated from proposed actions" (p. 63), the document contains no data or analysis of this limitation on allowable air quality impacts.	124	The federal government recognizes the value of air quality in pristine areas and has passed laws to provide for their protection. Generalized urbanization of the resource area is expected to occur regardless of BLM's management actions and will probably result in deterioration of air quality. The BLM will apply for appropriate permits when management actions are expected to affect air quality. The air quality management stipulations in Appendix B (FEIS) are designed to provide for compliance with federal, state, and local standards. No significant air quality impacts are expected from BLM management actions.
Water Resources		
1. Erosion hazard area exists E by S-E of Glenwood Springs.	44	1. Erosion hazard areas selected for specific management were areas where off-road vehicle (ORV) use exists on soils having a high or very high erosion hazard. While it may well be that the soils east by southeast of Glenwood Springs have a high erosion hazard, it was felt that ORV activity was insufficient to justify designation as an erosion hazard area.
2. Debris flow hazard is being addressed by the City of Glenwood Springs with intent to implement regardless of management plan selected. New developments adjacent to debris flow hazard areas have been directed to design for or to otherwise control debris flows. Existing constraints are adequate to promote and implement proper management practices. The additional ACEC designation is superfluous. The fire burned area on public land east and southeast of 23rd and Bennett in Glenwood Springs should be revegetated or otherwise stabilized to reduce the high soil erosion problem there. Another area not addressed and which seems to continually create some drainage and, infrequently, debris flow problems is Red Canyon Creek. This may be a problem with the Glenwood ditch in conjunction with Red Canyon Creek. What is the BLM's responsibility on this watershed area?	44	2. The city of Glenwood Springs strongly supports the BLM's area of critical environmental concern (ACEC) designation for the public land above the city. The ACEC designation acts as a flag to other resource activities of the BLM and permits the BLM to implement special management to reduce the debris flow hazard. The area burned by the fire was seeded with a mixture of native grasses and shrubs immediately following the burn. The project was monitored a year later, and revegetation was considered successful. At last review, only a few areas on south-facing slopes were considered to have a less than successful ground cover. The area is also not considered to have an accelerated erosion problem. Mud and debris flows are a common occurrence throughout the resource area. Glenwood Springs watersheds were singled out for special management because of the development that has occurred at the mouths of the debris flow drainages and the hazard to life and property that future debris flows represent. The BLM has no control over the location of structures on private land and is not responsible for damages that occur from natural events such as debris flows. Ordinances such as the Geologic Hazards Ordinance implemented by the city of Glenwood Springs are an excellent method for preventing damages from such events by preventing development in hazardous areas.

Table 7-3. Comments and Responses—Continued

Comment	Raised By (index number)	Response
3. Water yield and water quality enhancement efforts for the area around Castle Peak are in conflict (Maps 3-1 and 3-4): an increase in yield cannot but increase soil loss, suspended solids, and dissolved solids. However, the level of effort proposed for the PA (Table 3-1) compared to the RPA or the EDA is an improvement, though the level in the CCMA is better still. The reason for this, as map 4-4 makes clear, is that practically the entire GSRA has easily-erodable soils. In light of current water quality problems in the Colorado River (and the great effort and expense of government agencies to combat them) it seems prudent to us to give water yield a lower priority in the PA.	76	3. No significant impacts to water quality would occur in watersheds around Castle Peak under the Preferred Alternative (DEIS). The soils in sites considered suitable for increasing water yield range in erosion hazard from low to moderate. The Proposed Plan (FEIS) recommends that aspen areas be managed by the forestry program and that any clearcuts be allowed to regrow rather than be subject to conversion to grass. Because aspen is a prolifically sprouting species, any impacts to erosion or water quality would be very short-lived. In addition water quality from the aspen and timbered areas in the upper watershed is of high quality. Any additional water developed from aspen treatment should also be of high quality and may have a small dilution effect on the poor quality water originating lower in the watersheds. The water yield recommendations have been included as design features under the forest program (FEIS) and would be implemented to the extent possible in projects proposed by the forestry program.
4. BLM does not appear to offer enough protection for Critical Watersheds in the PA (Table 3-2), although certainly more than under current management. We believe that in such watersheds, ORV and road travel, timbering, grazing, water yield activities and oil and gas surface occupancy should be strongly curtailed or prohibited. High erosion hazard areas seem to be given least protection of all, and municipal watersheds are not protected from the road erosion and harmful drilling fluid residues associated with oil and gas development. It is therefore not obvious to us that effects attributable to the PA (p. 19, col. 2) will in fact occur.	76	4. Measures recommended for protection of critical watershed areas are listed in Table 3-2, page 19 (DEIS). These measures include ORV restrictions, restrictions on vegetation manipulation and timber harvest, restrictions on oil and gas surface facilities, inclusion in a fire exclusion zone, restrictions on utility developments, and livestock grazing limitations. This table indicates that surface facilities for oil and gas development are specifically restricted. The effects attributed to erosion hazard areas on page 19, column 2 have been changed (see Appendix L, FEIS).
5. Water quality problems in the Milk and Alkali Creek drainages would probably not be improved by the timbering proposed in the PA for the Castle Peak WSA. If poor quality is due to an erosion-prone soil, then surely keeping existing vegetation intact, water run-off reduced, and livestock away from stream banks would help (p. 16).	76	5. The great majority of the timber harvest proposed in the Castle Peak area is in watersheds tributary to the Colorado River not in the Milk or Alkali Creek drainages. In general, soils on which timber stands occur in the area range in erosion hazard from low to moderate. Consequently, significant impacts would not occur if standard operating procedures for timber harvest and its associated road construction were complied with. Site-specific activity plans for improving water quality in these drainages will be prepared following approval of the final resource management plan.
6. We do not think that the benefits of these programs justify their impacts on primitive recreation, wildlife habitat, soil and water quality, and scenic resources. For instance, an 8 percent increase in water yield will only have beneficial impacts if that increase can be captured and stored for use during water-short seasons. The lack of such storage facilities within the resource area indicates that any increased water yield will not translate directly into beneficial water use, but will instead be lost downstream with other spring runoff flows.	84, 125	6. The DEIS indicates that implementation of the water yield proposals would begin with an experiment or pilot study to determine both the quantity and timing of yield. It is possible that part of the increased yield would occur during the low flow seasons. The Proposed Plan (FEIS) recommends that water yield be increased by including design features into the projects of other resource programs. This would enable achievement of multiple resource objectives rather than the single objective of increasing water yield. The Proposed Plan should minimize the potential for adverse impacts.

7. To produce 5,700 acre-feet of water, more than 39,000 acres of high quality wildlife aspen habitat will be manipulated (page 18), with heavy adverse impacts on wildlife. Aspen habitat should be manipulated only to regenerate decadent stands for wildlife improvement.	86	7. Under the Proposed Plan (FEIS), the water yield recommendations have been scaled back. The recommendations are to include design features that increase water yield to the extent possible in the projects proposed by other resource programs. This approach should minimize adverse impacts to wildlife habitat. The woodland harvest proposals for aspen recommend that overmature decadent stands be harvested for fuelwood or other commercial use. The recommendations should benefit wildlife.
8. The idea of increasing water yield from Castle Peak by vegetative manipulation is a sacred cow that needs closer scrutiny. Is the water really needed? Who would benefit from the extra water? Who will pay for the work? Will funds be available? Would the projects be cost effective? How many other, more cost effective, water yield increase projects are available?	88	8. The water yield proposals were developed in response to the BLM's public participation process. The first series of public meetings held in the development of the alternatives identified water scarcity as an issue of serious concern. This issue was also a top priority of the Grand Junction District advisory council which consists of representatives from elected government, nonrenewable resources, recreation, wildlife renewable resources, environmental protection, transportation, rights-of-way, and the general public. Depending on the timing and location of the increased yield, benefits would accrue to the innumerable small reservoirs and stockponds in the resource area, to local water users, or to downstream water users. We hope to implement the water yield proposals as a secondary objective of other resource programs such as fuelwood cutting, range improvement, or other commercial activities, thus reducing the costs substantially and making them as cost effective as possible. All the proposals are based on the assumption that funding would be available for implementation from the BLM.
9. On Page 63, the RMP Draft EIS cites the Draft Supplemental Environmental Impact Statement for the Prototype Oil Shale Leasing Program as the basis for the statement, "serious air quality impacts due to oil shale resource development in the Parachute Creek region have been predicted for the area around Rifle." Such statements were questioned when the Draft Prototype Oil Shale Leasing EIS was reviewed and the draft EIS is being revised. Therefore, the citation is inappropriate and should be deleted.	92	9. Additional analysis (BLM 1983) indicates that the severity of impacts previously predicted for the area around Rifle (due to proposed oil shale resource development) would not be as serious as indicated in the Prototype Oil Leasing Shale Program DEIS. Although local scale modeling would refine the predictions, revised regional model results indicate a high potential that total suspended particulate increments would be exceeded along the Roan Cliffs and the Grand Hogback north of Rifle. It is moderately probable that SO^2 increments would also be exceeded along the Roan Cliffs (BLM 1983).
10. Page 15 says that "erosion hazard zones" scattered throughout the resource area would receive special protection. In a recent telephone conversation, David Mensing of your office indicated that the erosion hazard zones are only those identified on Map 3-5. This should be stated directly and it should be made clear that erosion hazard "zones" in the text are the same as erosion hazard "areas" on Map 3-5. "Special protection" should also be defined.	92	10. The DEIS has been changed. See the revised Management Philosophy in the FEIS.

Table 7-3. Comments and Responses—Continued

Comment	Raised By (index number)	Response
11. We strongly support the Bureau's designation of the critical watershed area above the City as areas of critical environmental concern (ACECs). These watersheds directly contribute to the serious, periodic debris flows suffered on properties located within the city limits. While we generally support the Preferred Alternative, we suggest leaving open to further investigation the extent of vegetation manipulations and other management actions to protect the watershed. The city's debris flow mitigation study has just been completed and should be of value to BLM in completing management proposals for this ACEC.	90	11. The recommendations for restricting vegetation manipulations and other management actions were designed to maintain maximum ground cover in the upper watersheds to minimize the amount of runoff from these areas which contributes to the severity of debris flows in the city below. The recently completed debris flow mitigation study appears to support the recommendations on pages 79, 81, 83, and 95 (DEIS) by the emphasis it places on the importance of maintaining protective ground cover. The BLM will work with the city on implementing the other recommendations in the study which affect public land. These restrictions on vegetation manipulation do not apply to fire rehabilitation. Revegetation of burned areas is a top priority and standard condition of fire rehabilitation.
12. Map 4-2, Erosion condition classes, color indexes the estimated annual soil loss per acre with ratings on the brown colored sections being classified as high, around 8 tons soil loss per year. I believe some, if not a major portion, of the lands classified in this category in R. 94 West and R. 95 West on the southside of the Colorado River are in error. Much of this land is adjacent to and similar to land which was studied during the recently completed Rifle Ski Area EIS. The findings of that study indicate a moderate to low sedimentation situation presently exists which converts to less than a high annual soil loss per acre. I believe Map 4-4 actually corroborates my preceding statement.	104	12. We have checked our inventory information and corroborated it with the third order soil survey information available from the local U. S. Soil Conservation Service office. As far as can be determined the information in Map 4-4 (DEIS) is correct.
13. We realize further research needs to be completed to gain a better grasp on the changes to the hydrologic system due to vegetation manipulation. We would like to comment, however, that according to Hibbert (General Technical Report RM-66) increases in flow due to aspen manipulation decline rapidly if aspen are allowed to recover the site. For example, he states that if clearcutting is repeated every 80 years, the average annual increase over the 80 years will only be about ⅓ inch over the area treated. This estimate is much lower than the DEIS estimate.	109	13. The Proposed Plan (FEIS) recommends that an experiment be conducted to verify yield and timing changes that result from aspen harvest. In addition, the Proposed Plan recommends that water yield be increased through other resource programs rather than through projects specifically for increasing water yield. Under these conditions, aspen regrowth would occur quite rapidly, and water yield would decline. These conditions are recognized in the analyses of the Proposed Plan and would result in substantially less water yield.

14. The Division of Wildlife is skeptical that increased water yields will cause a significant improvement in fish habitat, because increases would come during spring runoff. In some sites, repeated aspen clearcuts might adversely impact scenic values. It may be desirable and economic to cut only old growth, and then to allow regeneration rather than try to keep the land as meadow.	109	14. Under the Proposed Plan (FEIS) the water yield proposals would be implemented by initiation of an experiment or pilot study on the Naval Oil Shale Reserve to verify both the quantity of yield and timing of the yield that would occur. The impacts on fish habitat would depend on the time of yield. If the yield occurred during the low flow period, there would be a beneficial impact to fish habitat; however, it probably would not be significant because of the small increase in water yield expected under the Proposed Plan. The Proposed Plan also recommends that water yield proposals be implemented through other resource programs such as timber and woodland harvest and range improvement. Aspen would be harvested only as part of the woodland harvest program, which would concentrate on the harvest of overmature decadent stands. The practice would allow for regeneration of young healthy stands.
15. The DEIS states that an environmental consequence of each alternative will be increased sediment yield because of the soil disturbance associated with road construction. The DEIS further comments that additional sediment yield will reduce the useful life of the downstream dams and water diversion and retention structures. Is this impact significant? If so, what areas will be affected by increased sediment yield? Does BLM plan to mitigate the injury to dams and other structures.	109	15. This impact would be minor due to the lack of storage structures on local streams and the small amount of additional sediment contributed to major downstream structures when the Colorado River system is considered as a whole. In addition, impacts probably would be minimized by constructing roads to BLM standards. Drainages affected by increased sediment yield are listed in Appendix H (DEIS) for each alternative. No plans have been made to mitigate injury to dams and other structures. Site-specific analysis of soil movement would be conducted before project implementation.
16. In the introductory material, the DEIS gives the interrelationship between the BLM and other agencies and individuals. In this portion of the report, it states that the BLM must apply to the Division of Water Resources (DWR) for water rights. This statement is incorrect. Colorado Water Courts are responsible for decreeing all water rights and changes of water rights. Our office, among other things, is responsible for administering water rights, issuing well permits, and approving and inspecting dams that are within certain statutory specification requirements.	109	16. The DEIS has been amended. See Appendix L, FEIS.
17. The question "on what public land should the BLM appropriate water for public land management purposes" is rhetorically posed for four different subjects in chapter two of the DEIS. Does the BLM plan to appropriate water for these uses under Colorado Water Law? New livestock water sources such as wells, reservoirs, or catchment basins must be approved, constructed, and maintained subject to Colorado Water Statutes. Fish habitat ponds and recreation facilities must also be approved, constructed, and maintained in accordance with Colorado Water Statutes. We believe the BLM should inform potential buyers and leasors of BLM land that they are subject to applicable water statutes.	109	17. The BLM is currently in the process of identifying, quantifying, and recording public water reserves which were set aside by executive order in 1926 for livestock and domestic use in the resource area. The Colorado State Supreme Court recently confirmed the BLM's reserved rights in these public water reserves and stated that once identified and recorded, the amount of water necessary for livestock and domestic use at each source is outside the state appropriative system. BLM water needs in excess of that available from the public water reserves would be applied for under Colorado Water law. Buyers of public land are subject to all applicable state and local statutes.
18. Critical Watershed—Support for the Resource Protection Alternative in the area identified as erosion hazard area east of Carbondale, south of 100 Road.	112	18. This recommendation has been carried forward into the Proposed Plan (FEIS).

Table 7-3. Comments and Responses—Continued

Comment	Raised By (index number)	Response
19. Water quality problems already exist in the Eagle River. The DEIS indicates areas for water quality management to counteract these problems. One of these areas for management surrounds the part of the Castle Peak Wilderness Study Area that is targeted for timbering. The DEIS admits that this timbering would significantly increase erosion on the streams that empty into the Eagle River (p. 78, Technical Supplement). Therefore, it seems to us that the BLM is creating an illogical situation for itself by identifying one part of a watershed for water quality management while opening up contiguous acreage for increased sedimentation. The DEIS states that this increase in erosion would not be noticeable after 3-5 years following cutting (p. 78). However, the document also indicates the intention to allow 469,000 board feet to be cut annually (p. 79). Since 56,300,000 board feet have been designated for cutting, this erosion could go on for 125 years. This is not a short-term problem. The Technical Supplement also states that "alternative supplies of timber exist within and near the resource area" (p. 82.).	115	19. The great majority of the merchantable timber on Castle Peak lies in the drainages of Castle, Norman, and Catamount Creeks. These creeks are tributary to the Colorado River, not the Eagle River. The erosion hazard of soils in sites suitable for timber harvest ranges from low to moderate. The analysis in the DEIS indicates that significant impacts to water quality would not occur under the Preferred Alternative.
20. The first question one logically asks about such proposals is who wants this water yield manipulation? When we posed this question to personnel of the Glenwood Springs BLM Area office, we were told that Union Oil and other oil shale developers requested it. Indeed, the maps (Maps 3-2, 3 and 4) show that one of the largest areas is on the East Fork of Parachute Creek, immediately upstream from the Union oil shale plant and proposed reservoir. Other large areas are located on Castle Peak, Hardscrabble Mountain, and east, southwest, and northwest of Glenwood Springs.	124	20. The water yield proposals were developed in response to the concern over water scarcity that surfaced during the first series of public meetings held by the BLM in the development of the resource management plan. Increasing water yield was also considered a top priority of the Grand Junction District's Multiple Use Advisory Board. The proposals were not developed to provide water for any particular special interest groups.
21. Similarly, the EDA and RPA would both place restrictions on ORV use in order to improve erosion hazard areas, yet the PA proposes continuing ORV use that would prevent conditions in erosion hazard areas from improving (pp. 50-51). Most significantly, the EDA and RPA propose that wilderness values be preserved on 10,755 acres and 30,630 acres, respectively, while only 340 acres would be preserved under the PA (pp. 56-57).	124	21. We feel that these recommendations are appropriate for protection of these areas. They would prevent cross country travel from ORV use and any associated increase in erosion from occurring.
22. The increased water yields from the three levels are described in specific terms such as 3-5 inches per year for patch cutting of aspen (pp. 109, 134, and 159). This specificity does not appear to be supported by the state of the art. The DEIS cites Hibbert's 1977 publication as a basis. However, the preliminary and sketchy field work performed on increasing water yield from aspen patch cutting does not appear to support BLM's devising a plan granting authority to use the technique on such a large scale.	124	22. Research has been conducted on the water yield aspects of aspen management since the 1920s beginning with the Wagon Wheel Gap experiment and continuing to the present. Research has been conducted in Colorado, Utah, Minnesota, and Canada. The range of 3 to 5 inches used in the analysis is generally supported by the literature. The BLM, however, has chosen to verify both the quantity of yield and the timing of the additional yield by implementing a pilot study on the Naval Oil Shale Reserve. The Naval Oil Shale Reserve was selected for the pilot study because of the existence of U. S. Geological Survey gauging stations on a number of tributaries and several snow monitoring sites on the reserves. Incorporating these facilities into the study would reduce costs substantially.

23. Nowhere does BLM describe the length of the initial experiment (p. 18), the conditions under which it would be performed, or the criteria by which it would be judged a failure or success. In addition, BLM does not analyze the management alternatives, objectives, and techniques that will be considered if the experiment indicates the technique cannot be used on the scale now proposed in the DEIS. It is in these situations (the potential for experimental failure) that the planning regulations require BLM to make a worst case analysis and predict the probability of occurrence (43 CFR 1601.5-2(b)(5)(iv).	124	23. The intention would be to use the existing gauging stations on the Naval Oil Shale Reserve to monitor changes in the timing and quantity of yield. Ideally, we would treat one gauged watershed with a number of small patch cuts and leave another watershed untreated as a control. The specific proposals for the study including length of the experiment and the criteria by which it would be judged a success or failure would be developed after approval of the Proposed Plan.
24. The road or access construction necessary for access to the sites is largely overlooked in the analysis of impacts. The large increase in sediments after mechanical eradication is attributed to this disturbance.	124	24. Potential adverse impacts would be minimized by constructing roads to BLM standards and by including mitigation measures recommended during the site-specific planning stage.
25. Additional concerns overlooked or casually dismissed are the instigation of a water conservation program instead of attempting to increase supplies.	124	25. Conservation is a good idea, but the scope of the issues in the Preferred Alternative (DEIS) and Proposed Plan (DEIS) were limited to management that the BLM could implement on public land.
26. Although herbicides are listed in Appendix A as one method for vegetative manipulation, we have been unable to find any discussion of what types of herbicides would be used; what the decay products would be; the application conditions and controls; the qualifications of the persons applying the herbicides; the impacts of the herbicides on water and air quality, genetic mutations, disease susceptibility and death rates of humans and aquatic and terrestrial wildlife.	124	26. Herbicides are a treatment considered for livestock grazing and wildlife forage manipulations under the Proposed Plan (FEIS). They are not a proposal for increasing water yield. Herbicides would be used only after full consideration of alternatives. This consideration would include an analysis of environmental effects, effectiveness, safety, and benefits versus costs. Only herbicides registered by the U. S. Environmental Protection Agency would be used. When used, the least hazardous compound necessary to accomplish the desired management goal would be used. The handling and application of herbicides would be accomplished with caution and only by personnel who are certified or under the direct supervision of a certified applicator. Full consideration would be given to safety of humans, fish, wildlife, and others while using herbicides.
27. Other impacts also inadequately analyzed or ignored are the costs of the initial eradication or "manipulation" and the costs and frequency of maintaining the conversion of trees and shrubs to grasses after the initial treatment.	124	27. No analysis of the costs of treatment or maintenance was done because specific locations and treatment methods have not been selected. These costs would very by site and treatment method. This analysis would be conducted in a site-specific plan prior to project implementation.
28. The Preferred Alternative recommends water quality improvement for only two areas rather than the four areas recommended for management in the Resource Protection and Economic Development Alternatives.	124, 125	28. As a result of public comment and further research, the areas recommended for water quality management under the Proposed Plan (FEIS) have been expanded and revised from those recommended under the Preferred Alternative (DEIS) to include the areas indicated on Map 3-1 (FEIS). The revisions and rationale are as follows:

Table 7-3. Comments and Responses—Continued

Comment	Raised By (index number)	Response
		(1) The Thompson Creek area would be deleted entirely as an area for water quality management. This area was originally selected because of the high erosion hazard of the mancos derived soils in the lower part of the basin. The Proposed Plan recommends that the basin be managed as a natural environment area. This management includes a visual resource management Class I designation that would preclude vegetation disturbance to increase wildlife or livestock forage and prohibit timber or fuelwood harvest. This designation might also preclude construction of sediment control structures that might have been recommended in the activity plan process. In any event, the management recommended through the natural environment area designation should provide a high degree of protection for the BLM portion of the watershed. Other elements that entered into the decision to delete this area were that only 9 percent of the watershed is public land and that historically a source of much of the water quality problem associated with Thompson Creek has been the coal mine located upstream from public land. (2) A new area encompassing the drainages of Horse, Willow, and Poison Creeks would be included as an area for water quality management. These creeks were identified as a source of high salinity concentrations in a 1978 study conducted by the BLM entitled: *The Effects of Surface Disturbance on the Salinity of Public Lands in the Upper Colorado River Basin* (BLM 1978). The BLM's baseline water quality monitoring conducted during the inventory phase of the resource management plan indicated that other problems also exist in these drainages. They have high sediment levels, poor channel stability, very high erosion hazard, high temperature, sulfate and manganese levels, poor riparian vegetation, and low dissolved oxygen levels. Further rationale for including this area is that a majority of the watersheds is public land, with about 70 percent public land in the Horse and Willow Creek drainages and 50 percent public land in the Poison Creek drainage. In addition, this area is identified as a high priority area for improving livestock and wildlife forage through vegetation treatments, and existing stands of productive woodland are suitable for fuelwood harvest. (3) The water quality management area originally identified that includes the area from State Bridge to Burns, both north and south of the Colorado River, would be retained under the Proposed Plan (FEIS). Water quality problems include high salinity, high sediment, poor to fair channel stability, and high erosion hazard. The area is also a high priority area for implementing vegetation manipulations to improve wildlife and livestock forage conditions.

		(4) The Divide Creek area that was included under the Economic Development and Resource Protection Alternatives (DEIS) would be included under the Proposed Plan (FEIS) but scaled down. The size would be reduced to an area which includes the Tar and Gibson Gulch areas and all the public land lying between East and West Divide Creeks. The lower areas of Divide Creek are often intermittent due to upstream diversions, and the large areas of private land probably have a much greater impact on water quality due to irrigation return flows and feedlot runoff. Water quality problems in Divide Creek include high sediment levels, high salinity, fair channel stability, and bacteria. Tributary watersheds such as June and Clear Creeks are high priority areas for vegetation manipulation to improve wildlife and livestock forage; the area is also suitable for fuelwood harvest. (5) The Milk, Alkali and Eiby Creek water quality management area would be retained Under the Proposed Plan (FEIS) but would be scaled down to exclude the Eiby Creek watershed. The Eiby Creek watershed is only 20 percent public land, and the majority of the runoff is derived from private land in the upper basin.
29. The PA downplays the cumulative impacts on water quality of its combined timber, minerals, roading, ORV, water yield, and livestock management plans.	125	29. The same approach was used in analyzing water quality impacts under the Preferred Alternative as under the other three alternatives in the DEIS. An attempt was made to quantify sediment yield impacts from vegetation manipulations proposed by the wildlife and livestock grazing programs and timber and fuelwood harvest proposed by the forestry program. Minerals and road construction were discussed qualitatively. Cumulative impacts on water quality were less under the Preferred Alternative than under the Resource Protection or Economic Development Alternatives. In none of the watersheds analyzed did sediment yields exceed 208 plan guidelines. Appendix H (DEIS) indicates sediment yields expected by watershed for each alternative.
30. Critical watersheds and erosion hazard areas are not adequately protected from development. For example, the Debris Flow Hazard Zone northwest of Glenwood Springs and the Elk Creek Municipal watersheds shown on Map 3-5 are not exempt from oil and gas subsurface leasing, roading, ORV's (Map 3-37), utilities and communications facilities (Map 3-44), and grazing projects.	125	30. While subsurface oil and gas leasing has not been restricted in the debris flow hazard zone and municipal watersheds, surface facilities associated with these activities have been restricted. Consequently, no adverse impacts to these critical watershed areas are expected from oil and gas activity. ORV activity is restricted to designated roads and trails on public land in the debris flow hazard zone and to existing roads and trails in the municipal watersheds. Very little existing ORV use presently occurs in these areas due to problems with access and steepness of slopes. Little change in ORV use is expected in the future in these areas; consequently, the ORV designations recommended under the Proposed Plan (FEIS) are thought to be adequate to protect these watersheds. These areas are also designated as sensitive for utility and communications facilities which means that in most cases applicants would be encouraged to seek alternate locations when available. In other cases, applications would be considered if mitigation measures could reduce potential impacts. No grazing or wildlife vegetation manipulation to increase forage would be permitted in these areas, and livestock grazing intensity would be restricted to light intensity in the debris flow hazard zone.

Table 7-3. Comments and Responses—Continued

Comment	Raised By (index number)	Response
31. On page 16 of the DEIS, it is noted that: "under Resource Protection and Economic Development Alternatives, four areas shown on Map 3-1 would be monitored to identify the origins of existing water quality problems. Under the Preferred Alternative, two areas, Milk Creek and Alkali Creek basins, shown on Map 3-1 would be investigated..." Map 3-1 is very non-specific and does not identify the watersheds or the nature of water quality problems. Under discussions of the Affected Environment, these watershed problem areas are again not defined. There is considerable discussion of salinity water quality impacts from saline seeps, ground water recharge areas, etc. We are not sure whether these are the same problem areas discussed on page 16 or not. The Final EIS would be enhanced by identifying the four problem areas mentioned above. A more understandable rationale should also be provided as to why these areas will not be monitored for their possible origins. If the salinity-related issues are separated from the identified water quality problems, some discussion should also be included as to what the BLM can and should do relative to salinity control. The EIS should also recognize that the U. S. Bureau of Reclamation is conducting studies for possible control of some of the saline springs in the Glenwood-Dotsero area. The local water quality management agencies may have identified high priority watersheds which contain BLM land in addition to watersheds contained in the Areas of Critical Environmental Concern and Critical Watershed Management Areas. We encourage cooperation with these agencies in prioritizing resource management actions to these areas if needed.	129	31. The Water Resources section of the Affected Environment has been amended as suggested. See also response to comment 28.
32. There is no statement in the draft relating to BLM plans to appropriate water for multiple-use purposes although this issue is mentioned in Chapter 2 as a management concern. Will BLM appropriate water in the Glenwood Springs Area for wildlife and other purposes? If so, how much?	135	32. The BLM is currently conducting an inventory of the resource area to identify springs that qualify as public water reserves created by Executive Order of April 26, 1926. A recent Colorado Supreme Court decision limited the quantity of water which could be reserved at each spring to that necessary to meet livestock and human use. Human use has not yet been defined. A priority date of 1926 is claimed for the quantity of water needed to meet these uses at each spring which qualifies as a public water reserve. Water rights that may be filed for wildlife and other multiple use needs would be filed in accordance with state of Colorado appropriative rights procedures.
Minerals Management		
1. Roaring Fork River corridor is nearly all private land. How has the BLM determined its rights of designation and management along this corridor as shown in green on this map. Same is true to a lesser extent along portions of Eagle River and upper Colorado River.	44	1. The designation affects only the land managed by the BLM.
2. Does the minerals management planning criteria follow intent of the Federal Mining Law of 1872?	44	2. The basis for the planning criteria are listed on page 11 of the DEIS. The first is national, regional, and local laws and regulations. This included the Mining Law of 1872.

3. A check with Map 4-1 will prove that some private lands are included within management designation areas (re: T. 6 S., R. 90 and 91 W.). As noted, if all maps had some indication of public land holdings this type of error would less likely occur.	44	3. Public land background has been added to the maps in the FEIS.
4. What protection is made available to existing claims, leases, sales, and other resource development plans? Please remember nature was not so selective in the placement of natural resources. Given an acute need, indeed Congress could reverse excessive restrictions, but time requirements for exploration and production development are so great, and, when coupled with the zealous objections of a few environmentalist organizations, the obstacles to an orderly and timely development are so considerable as to generally terminate the effort.	44	4. All existing mining activities, including leases, claims, and so on, have prior existing rights. This means that the rights associated with those activities are honored and will continue to be honored. In addition, under the Proposed Plan (FEIS), few restrictions have been placed on mineral development in areas believed to contain valuable mineral deposits (see Chapter 5, Impacts on Minerals).
5. When the inventory of natural resources is incomplete how can impacts or restrictions placed on mineral developments in these alternatives be honestly assessed?	44	5. Inventories are ongoing. With minerals, the inventory is based on geologic inference, existing literature, industry information, and BLM data. Restrictions placed on mineral development were based on the above inventory sources.
6. Mineral values can only be identified following a comprehensive exploration program. Let's leave the options open until either private enterprise or the BLM has been able to identify and inventory these natural resources. This posture should hold regardless of land tenure proposals or disposal status.	44	6. When public land is disposed of, the mineral values are retained by the federal government unless the surface use outweighs the mineral values. Should a decision be made to dispose of the mineral values with the surface, the federal government receives fair market value for those minerals. If need be, the mineral values are determined through a comprehensive exploration program. Some fragile or unique areas need to be protected from the adverse impacts associated with mineral development.
7. All municipal watersheds and high erosion hazard areas on map 3-5 should have "no surface occupancy" stipulations on leases. The same is true for scenic and recreational lands like those around Castle Peak. Such stipulations would make the RMP conform more closely to local plans.	76	7. The municipal watersheds and high erosion hazard areas are designated for no surface occupancy under the Proposed Plan (FEIS). Because the Castle Peak area appears to have no mineral potential (based on past exploration), it was not felt necessary to restrict mineral development.
8. The statement on p. 67 that limestone production is to increase more than ten times on BLM lands in the next few years deserves more extensive comment in the DEIS. Why the dramatic increase? Where will the mining occur? In any part of the Glenwood Canyon Scenic Corridor? What will be the impacts?	76	8. Almost all of the land within Glenwood Canyon is managed by the U. S. Forest Service. The small amount at both ends of the Glenwood Canyon managed by the BLM contains mining claims. However, mining claim location and development is a nondiscretionary action. Therefore, until the claimant actually starts to develop his/her claim and notifies the BLM of the intended actions, the exact location of the mining and the impacts from those activities will be unknown. The Affected Environment section of the FEIS contains a more realistic assessment of future limestone demand.

Table 7-3. Comments and Responses—Continued

Comment	Raised By (index number)	Response
9. On page 158, under Impacts from Minerals Management, the Draft states, "Potential short-term, generally insignificant salinity and sediment impacts would continue to occur from existing mineral developments. Spoil pile runoff would increase surface water salinity and sediment. A secondary source of these impacts would include improperly designed or rehabilitated roads, pipelines, and drill pads. Impacts would continue until...rehabilitation." This rather cursory dismissal of mining impacts is disturbing in light of the potential for increased mining activity and subsequent impacts in the resource area. Does not the BLM have standards that will prevent or mitigate "improperly designed or rehabilitated roads, pipelines and drill pads"? "Rehabilitation" generally refers to revegetation of disturbed soils. Water quality impacts such as those described above can and should be mitigated as part of pre-development site design and permitting and the BLM should make a strong commitment to such mitigation in the RMP.	84	9. The BLM has standards to prevent or mitigate improperly designed or rehabilitated roads, etc. However, any surface-disturbing activities would have impacts on salinity and sediments, and those impacts would continue until the area were reclaimed. The FEIS has been changed (see Chapter 5, Impacts on Water Quality).
10. "Locatable Minerals. BLM approval would not be needed if proposed operations would disturb 5 acres or less per year, but notification would be required." Although this does not directly affect National Forest management, I have a concern that a 5-acre operation, if done improperly and in an environmentally sensitive location, could potentially be of greater significance than a larger operation done properly. In addition, 5 acres per year can add up quickly over a period of years. The result could be a large project with considerably different impacts and effects than originally planned.	114	10. 43 CFR 3809 regulations deal with preventing "unnecessary and undue degradation of the public lands" under the General Mining Laws. These regulations give the threshhold levels based on acreage, not on the types of disturbances. The requirements for submission of a Notice of Intent, including a reclamation plan, are outlined in *43 CFR 3809.1-3.* The areas involved in the mining portion are reclaimed as quickly as possible while still allowing the claimant the means to preserve evidence of his/her discovery on the mining claims. These measures would minimize the areas impacted by the ongoing operations while still allowing the claimant to develop his/her claim in accordance with the General Mining Laws.
11. The visual quality of Rifle Gap Reservoir needs to be protected (minimal or no surface disturbances) should mining of the coal in the Grand Hogback take place.	109, 125	11. The visual quality of the viewshed will be one of the concerns analyzed should the area be leased for coal development.

12. We must take exception to a portion of the preferred alternative for Minerals Management, namely the closing of 2,470 acres in the Deep Creek Canyon area. The closure of this area will have a significant impact on mineral development because it lies in or next to what has been identified as a major high-calcium metallurgical limestone deposit needed for the manufacture of iron and steel. A major steel manufacturer, CF&I, submitted permit applications and a detailed impact analysis for this property as early as 1975. A quarry and plant area would be developed in secs. 28, 33, and 34, T. 4 S., R. 87 W., with an aerial tram extending nearly 4 miles eastward to a rail loadout facility at Dotsero. Deposits of this size and high chemical purity are extremely rare in Colorado, and CF&I's decision to apply for this site came only after many years of exploration and careful economic evaluation. Closing the Deep Creek recreational site to mineral location would, in our opinion, seriously impede or defeat this critical mining proposal and so effect an unnecessary loss of a valuable mineral resource.	109	12. Although Deep Creek Canyon area has been "proposed closed to mineral location," this closure would be subject to valid existing rights. Development of the CF&I project has been determined to be compatible with the scenic values of Deep Creek Canyon because they are located in separate geographic areas.
Aquatic Habitat Management		
1. What does the asterisk denote?	44	1. The asterisk denotes those streams thought to have potential for supporting a viable fishery. Currently these streams do not support fish.
2. The large areas of land along the upper Colorado River between Dotsero and State Bridge, which are legally inaccessible to the public, are still recommended for intensive stream management. If public has limited access, whom does the cost of intensive management benefit?	44	2. Under the Preferred Alternative (DEIS) and Proposed Plan (FEIS), only the upper Colorado River, west fork of Sheep Creek, and Red Dirt Creek (28.8 miles) are proposed for habitat improvement (see FEIS, Table 3-3). Legal public access is available to the Colorado River and the west fork of Sheep Creek, and the Proposed Plan recommends obtaining access to Red Dirt Creek.
3. Appendix K. Cabin Creek (King Mountain Capability Unit) and Catamount Creek and Norman Creek (Castle Peak Capability Unit) are marked as not presently supporting fish populations. We know that Cabin and Catamount Creeks support fish and believe that Norman Creek does also. Cabin Creek contains brown trout, cutthroat trout, and brook trout; Catamount Creek contains cutthroat trout and brook trout.	109	3. The appropriate changes have been made under the Proposed Plan to reflect this information (see Table 3-3, FEIS).
4. Page 84, Aquatic Wildlife Assumptions: A fourth assumption could be added to this category to state that the condition of the riparian zone influences the quality of the aquatic environment.	109	4. This suggestion has been incorporated into the FEIS.
5. Concerning the improvement of the threatened Colorado River cutthroat trout on the Naval Oil Shale Reserve. I doubt if this can be done especially if sedimentation is the issue. An examination of the soils and terrain of this region will show that the major drainages are very steep and eroding rapidly. The light-thin-loose soils and associated sub-surface material of the Wasatch Formation which underlies the Green River Formation of the Naval Oil Shale Reserve is subject to rapid erosion. Any major storms, of which there are a number each summer, bring sediments to main drainages bisecting the Naval Oil Shale Reserve. I am not aware of any vegetation manipulation practice that would decrease sedimentation appreciably in the East Fork and Middle East Fork drainages of Parachute Creek on the Oil Shale Reserve.	121	5. Sedimentation is not a major factor in the poor condition of the aquatic habitat. The Erosion Condition Class, Map 4-2 (DEIS), indicates soil loss is low, and the Sediment Yield, Map 4-4 (DEIS), shows a moderately low class for this area. The greatest problems stem from poor riparian and streambank condition. An aquatic habitat management plan (HMP) has been written for the Naval Oil Shale Reserve. It outlines specific problems and possible solutions. The BLM will begin implementation of this HMP this summer (1983).

Table 7-3. Comments and Responses—Continued

Comment	Raised By (index number)	Response
6. Even though streams of the Castle Peak Wilderness Study Area may not currently be popular for fishing, Eagle River is. Timbering would ruin any fisheries potential within the area and would seriously jeopardize existing fishing along the Eagle.	115	6. Most of the streams draining the potentially harvestable timber on Castle Peak drain into the Colorado River, not the Eagle River. The majority of the harvestable timber occurs on sites of low to moderate erosion hazard; consequently, minimal impacts to water quality would occur, particularly with the inclusion of the required management stipulations listed in Appendix B (FEIS). Therefore, no significant impact to either the Eagle or Colorado Rivers or their tributaries would occur.
7. According to the PA, only a few streams will be managed to improve wildlife conditions, as opposed to both the RPA and the EDA, which recommend improvements for "most below-average lakes and public lands in the resource area" (pp. x-xii).	109, 125	7. The criteria used to select those streams proposed for management varied by alternative in the DEIS. The Resource Protection Alternative indicated all streams and lakes on public land in the resource area would be upgraded to or maintained in an average to excellent condition. The Economic Development Alternative limited stream management to those having an existing or potential fishery and having more than one half mile of continuous flow across public land and on lakes surrounded by at least 40 acres of public land. The Preferred Alternative further limited those streams and lakes designated for management by requiring that there be existing or easily obtainable public access (see pp. 23 and 45 of the DEIS). Table K-4 (Appendix K, pages 250 and 251, DEIS) lists streams scheduled for intensive management under the Preferred Alternative. Those streams proposed for management under the Preferred Alternative have been carried forward into the Proposed Plan (FEIS) with the exception of those streams crossing public land designated for disposal through the Asset Management Program. Table 3-3 (FEIS) lists those streams designated for management under the Proposed Plan.
Terrestrial Habitat Management		
1. The BLM says that this is a fire hazard and that taking out the dead wood would help wildlife and help protect the area. Down-wood is the result of beetle kill over 30 years ago. The animals of the area seem to have adapted quite well. It is not necessary to take down that dead wood for the reasons the BLM has cited.	23, 25	1. The Castle Peak area is important to many wildlife species. Much of the timbered area is dead, with much of the timber on the ground. If a wildfire should occur in this area, all timber and many other habitat values probably would be lost. By selectively removing some of the dead timber, habitat conditions might be improved for some species while reducing the potential for a devastating fire.
2. Livestock appear to have received emphasis over big game in the Preferred Alternative in the DEIS. If this is the case, why did BLM do it when the DEIS indicates big game is more important economically than livestock in the resource area.	29, 66, 76, 86, 87, 109, 115, 117, 124, 135	2. The criteria for forage allocation were changed under the Proposed Plan (FEIS) to give more emphasis to big game. When BLM developed the objectives and criteria for allocation of forage for the Preferred Alternative (DEIS), it was not apparent that big game numbers would be affected so significantly.

3. Rock Creek and Egeria Creek are very poor selections for peregrine falcon introductions. The railroad goes through and across this area and there is a track maintenance area here which requires substantial vehicle traffic in addition to the train traffic.	44	3. The peregrine falcon introduction proposals were based on physical habitat needs of the species and on analysis of inventory information gathered in 1978 and 1979. These areas have been proposed as possible introduction sites. If the Colorado Division of Wildlife wishes to propose an introduction here, the suitability of these sites would be further evaluated and compared to other potential introduction sites in the state before any decision were made to carry out such introductions. These areas were proposed merely to determine if any resource conflicts would render them unsuitable. They have been carried forward under the Proposed Plan. (It should be noted that human activity does not necessarily preclude introduction of peregrine falcons, as demonstrated in eastern cities.)
4. What is the documentation of "severely impacted by road construction, gravel extraction, water diversions and livestock grazing."? I suggest children with B-B guns, young people on woodsies, and both legal and illegal shooting more severely impact the riparian habitat.	44	4. One only has to travel through the various valleys in the resource area to see that roads, railroads, developments (housing and commercial), water diversions, and gravel pits have removed many acres of riparian habitat. Some areas of riparian habitat are also suffering from heavy livestock use. This occurs along both the rivers and smaller streams throughout the area. In addition to the physical removal of riparian vegetation, traffic, recreation, and commercial and domestic uses (intrusion of people) often severely impact wildlife species using these habitats.
5. I understand that much private land is utilized by wildlife, but to include the benefits of these private resources in order to justify big game populations is to establish an improper baseline for any wildlife guidelines.	44	5. The BLM is not justifying big game populations based on private resources. We are merely pointing out that if regional big game population goals proposed by the Colorado Division of Wildlife are to be met, very significant increases of forage will have to be provided by public land if those private lands are taken out of production.
6. If public land for wildlife in the resource area is in short supply for present wildlife use and manages only due to supplementary benefits provided wildlife use on private land, then why introduce more to compete for less? Utilize to maximum potential what is available in a balanced management plan. This may allow introduction of additional or new species if resources become available.	44	6. Based on habitat inventories done in 1978 and 1979, it was felt that unoccupied habitat suitable to support these species may be available.
7. We cannot agree with the statement on page 165 that "localized long-term beneficial impacts to wildlife (from Forest Management), especially big game, would result from increased forage production." We think that the adverse impacts of timbering would be long-lasting and severe. These impacts would include loss of solitude and escape cover, loss of calving habitat, and increased harassment, hunting pressure, poaching, and wildfire potential due to increased road access.	84	7. The BLM recognizes that wildlife might be detrimentally impacted in the short term; however, these impacts would vary with harvest methods, harvest seasons, length of contract, and size and location of the project. The BLM feels that by applying the required management stipulations listed in Appendix B (FEIS), adverse impacts to wildlife resulting from timber harvest could be minimized and many beneficial impacts such as those mentioned above, could be achieved.
8. Page 25. PA, Vegetation manipulation will reduce the 20 percent big game decrease to 7 percent. This is the total previously discussed. Where are the effects of land disposal?	86	8. This table shows effects of wildlife proposals only. See DEIS, page 53, Summary of Major Actions and Impacts for cumulative impacts, including land disposal.
9. Page 47. The preferred alternative wildlife section does not meet all your criteria goals for wildlife. 1—Compatible with other agency goals. 3—Sensitive to local populace. 5—Resource issues of national concern.	86	9. The decision criteria were used as guides in developing the Preferred Alternative (DEIS). However, the final decision did not have to satisfy all the criteria for each resource.

Table 7-3. Comments and Responses—Continued

Comment	Raised By (index number)	Response
10. Page 165. Effects of thermal cover removal should be featured and emphasized in a special section.	86	10. The value of thermal and hiding cover is discussed by vegetation type in Chapter 4, Affected Environment, and Chapter 5, Environmental Consequences (DEIS and FEIS).
11. Page 70. Include a discussion of game birds and non-game species.	86	11. The Affected Environment chapter discusses game birds and non-game species found by vegetation type. Additional information is located in the Resource Area Profile in the Glenwood Springs Resource Area office.
12. Map 4-5 designates some of the land just north of the White River National Forest boundary in T. 7 S., R. 94 W., as critical winter range for elk. Based on 15 years of personal observance, I am certain this is not correct. While a few elk, less than 10 head, may winter in the designated area, the vast majority winter to the west and north below County Road 301. Most of this land lies in R. 95 W. This could be easily confirmed by landowners in the Holmes Mesa area.	104	12. Wildlife use area designations were based on input from the Colorado Division of Wildlife in 1978 and 1979. These estimates were based on recent historic uses. At that time, elk use patterns appeared to be changing; however, it was thought to be only temporary. Therefore, our maps may not reflect some of these changes.
13. In regard to grazing allotment units 8610, 8611, 8612 and 8613 and the proposed reductions in domestic livestock AUM's. It is my opinion that somehow greatly inflated numbers for big game forage requirements have been introduced into this part of the study. Following are my computations which bring me to this conclusion. Using the factors for converting cow AUM's to elk AUM's of 2.6 elk/cow and deer of 9.5 deer/cow results in a total of 3,708 elk AUM's and/or 13,547 deer AUM's. If a further assumption is made that the average winter period requirement for these grazing allotments is three months, then there would be 1,236 elk or 4,515 deer using these allotments during the winter period. These grazing allotments are a portion of Division of Wildlife game management unit No. 26 which encompasses an area bounded by State Highway 131 and the North and East, Derby Creek on the West and the Colorado River on the South. Obviously the grazing allotments are a very small part of the total GMU No. 26. Division of Wildlife estimates of big game populations on a five year average of the entire unit are 1,398 elk and 2,983 deer. Thus, there is certainly a large discrepancy between big game forage requirements proposed for these allotments and total numbers estimated by the Division of Wildlife. To my knowledge there have not been any range utilization transects done on any of the units; however, even a casual observation indicates an improving trend in forage production over the past ten to fifteen years.	105	13. It was estimated that for 3½ months each year (11-1 to 1-15 and from 5-1 to 5-31), there are approximately 60 deer and 24 elk per square mile in this area. From 1-16 to 4-30 during severe winters, there are approximately 110 deer and 60-100 elk per square mile. In addition, from 6-1 to 10-31, there are aproximately 7 deer per square mile using the allotments. These figures are based on the best information available at the time the inventories were conducted. The methodology for determining big game populations and their forage requirements are briefly explained in Appendix F (DEIS). The time period the allotments were used and the number of animals using the allotments, which you used in your computations, were less than the numbers and season of use that we used, which accounts for some of the discrepancy in the conclusion. Currently, no browse transects from which to determine wildlife use have been established in these allotments.

14. Another consideration is the substantial amount of private land in GMU No. 26 and whether any allowance was made for the amount of forage provided on private lands for the big game herds. Lastly, cattle are accurately tabulated and exact use dates are established; whereas, tabulation of elk and deer are estimates only and the exact location and numbers of animals cannot be established by current methods.	105	14. The big game populations and their forage requirements were estimated only for public land. We recognize that big game animals use private land; however, the BLM has no control over the private land. It is correct that big game populations and seasonal use areas are based on estimates. Final forage allocations and range condition will be based on field monitoring over the next five years. Final allocation recommendations will be based on the results of the field monitoring. Efforts for monitoring will be concentrated in problem areas.
15. Throughout the text and tables of this statement, AUMs for wildlife are projected on an allotment basis. This implies that wildlife can be managed on an allotment basis, which is unrealistic and not feasible. The DOW manages big game on the data analysis unit, or herd unit, which may consist of one or more game management units (GMU), and are many times larger than the largest grazing allotment. The DOW will not consider making reductions on big game populations at the GMU level unless there is a 20-25 percent shortage of wildlife AUMs in an entire GMU.	86, 109	15. The forage allocation criteria under the Proposed Plan have been altered to remove the allocation restriction by allotment. The new allocation criteria are listed in the FEIS under Chapter 3, Livestock Grazing Management, Implementation. The allocation by game management unit is displayed in Table 5-4, FEIS. The final allocation of forage to livestock and wildlife would be based on 5 years of habitat monitoring. We feel that the Colorado Division of Wildlife should consider making reductions in big game populations based on use in seasonal ranges in a game management unit rather than on an entire game management unit basis. For example, if the crucial winter range makes up only a very small portion of a game management unit but is overgrazed by 20 to 25 percent (total demand exceeds total available animal-unit months), a reduction would be justified even though winter and summer ranges are capable of supporting many more animals than currently exist. This could conceivably require reductions in other game management units if it were felt that the wintering animals were migrating from another unit.
16. Various aspects of the SVIM methodology are inaccurate or erroneous and lead to inappropriate decisions in forage allocation.	109	16. Soil Vegetation Inventory Method (SVIM) was an approved method at the time of our forage inventory. It was used with other information to estimate initial stocking rates that are portrayed as the initial allocation. Final stocking rate decisions would be based on field monitoring of livestock and big game use over a period of 5 years and not on SVIM.
17. What is the rational for determining that existing use for wildlife is more realistic than DOW goals?	109	17. Public land supplies approximately 50 percent of the crucial deer and elk winter range in this resource area. In some game management units, forage production on this crucial winter range is not adequate to support both existing big game and livestock numbers in a satisfactory manner, let alone increases to meet Colorado Division of Wildlife (DOW) goals. Therefore, under the Preferred Alternative (FEIS), it was felt that it was more logical to sustain existing big game populations rather than attempt to meet the 1988 DOW population goals. However, based on further evaluation of our forage production information and by changing the allocation criteria and the objective to DOW goals resource area wide, significant increases in some game management units above existing use were attained, although the allocation still falls short of the DOW goals (See Proposed Plan, FEIS).

Table 7-3. Comments and Responses—Continued

Comment	Raised By (index number)	Response
18. Page 165, Impacts from Livestock Grazing Management, Paragraph 7: Utilization of forage by livestock on big game winter range should be limited to 20 percent of available forage, not 20 percent utilization of just browse species.	109	18. Total available forage includes grasses, forbs and browse species. Many grasses and forbs that are available for forage during the spring and summer months dry up and become unavailable as winter feed for either livestock or big game. In addition, many dried grasses and forbs remaining on the winter range are unavailable for use because of heavy snow cover. We feel that since browse is generally considered the mainstay forage for big game animals during severe winters, it is more reasonable to limit use on just the browse rather than all forage species.
19. Monitoring: The BLM has stated that before any operator has to take a reduction in AUMs, an intensive monitoring program will be implemented to establish the validity of the initial allocation process. The DOW requests that the same monitoring program be implemented for wildlife, and the same five year grace period be extended before we are requested to make reductions of wildlife.	109	19. This is part of the Proposed Plan (FEIS). See Livestock Grazing section, Implementation.
20. We oppose the suggested extensive vegetative manipulations that would result in this decrease, especially since this would require perpetual care.	115	20. Vegetation manipulation projects would be undertaken to benefit both big game and livestock. The Proposed Plan (FEIS) contains a forage allocation more favorable to big game.
21. The draft EIS should describe how the vegetation and aquatic habitats are to be manipulated before one can accurately evaluate the resource management plan. Undoubtedly some organisms would benefit from proposed manipulations as identified in the various alternatives, but other organisms would suffer and the latter is not well defined.	121	21. Appendix A, page 187, DEIS, lists possible management practices that could be used to manipulate vegetation and aquatic habitats. Since no site-specific proposals were made under the Proposed Plan (FEIS), it was not within the scope of the EIS to address in detail the specific methods or results of habitat manipulations. Prior to manipulating any vegetation, a site-specific plan and environmental analysis would be written with mitigation being incorporated into the plan. Appendix B (FEIS) lists some of the required management stipulations we would be following.
22. Page xi and xii. You state that "Wildlife habitat projects such as vegetation manipulations, introduction of species, water developments, and riparian habitat improvement would benefit all wildlife species". This is not true for when you alter a habitat, manipulate vegetation, introduce new species, etc., some benefit and others lose.	121	22. The FEIS Errata, Appendix L, shows the following change: "Various types of wildlife management practices such as vegetation manipulations, wildlife introduction and water developments would benefit many different wildlife species. Benefits, detriments, and species affected vary with the management practice, its location, habitat type involved, and timing and duration of the project."
23. We would prefer to see timbering kept out of elk calving areas at all times, not just for six weeks in the spring. Elk are very sensitive to human intrusion and do not take up that much of the land. This is especially true since summer range is becoming increasingly critical for local elk herds.	115	23. Under the Proposed Plan (FEIS), timber harvesting would not occur on identified elk calving areas. Disturbance to buffer areas surrounding these calving areas would be prohibited from May 1 to June 15.

24. On page 165, the DEIS reports that under the preferred alternative, wildlife species dependant upon original vegetation types would be insignificantly affected by the removal of original vegetation for livestock grazing management. Yet in the next paragraph, you state "changing sagebrush on winter ranges to a grass-forb type would have a long-term adverse impact on big game, sage-grouse, and many small game and non-game species that depend on sagebrush for their habitat requirements." Both of these statements cannot be correct.	135	24. Location and, consequently, vegetation types to be modified have not been determined yet. The Preferred Alternative (DEIS) and the Proposed Plan (FEIS) are general in nature. As specific projects are proposed, they would be analyzed in site-specific environmental assessments. The impact analysis has been changed to correct this discrepancy.
25. No analysis is performed of the effects of vegetation eradication and conversion for increasing water yield on habitat and population dynamics of non-game mammals and birds. The implicit assumption in the DEIS is that they will conveniently move to accommodate this program and no long-term impacts will result. This assumption relies on the false "vacuum in nature" theory; that is, that the carrying capacity has not been reached and there are vacancies, "for rent," spaces, in which these displaced animals can live. No analysis is presented to support the statement in the DEIS that "the small amount of aspen" removed "would reduce the significance of these impacts" (p. 165). In fact, the DEIS uses the identical two paragraphs to describe the impacts on terrestrial wildlife for all three action alternatives (pp. 115, 140, 165), yet the acreage affected ranges from 34,492 acres to 104,396 acres, and the DEIS admits that at least the aspen groves provide essential non-game habitat.	124	25. The analysis of the effects of vegetation type conversions for wildlife habitat and range improvement are discussed on pages 115-116, 140-141, and 164-165 of the DEIS. The same analysis would apply to type conversions for increases in water yield as much of the water yield increase would come from projects proposed for range and wildlife habitat improvement. The statement on page 165 (DEIS) says "The application of project design features (Appendix B) and the small amount of aspen that would be removed would reduce the significance of these impacts." The project design features are quite restrictive and limit aspen harvest in the Preferred Alternative to 1,725 acres per year. It is further limited to harvesting aspen in 40-acre or less parcels not to exceed 50 percent of a watershed. With the various restrictions placed on vegetation manipulation as outlined in Appendix B and with the knowledge of the tremendous habitat and wildlife species diversity within the Glenwood Springs Resource Area, it was felt that a range of 34,492 to 104,396 acres would be treated over a 10-year period without endangering the existence of any wildlife species residing in the resource area.
26. No "critical threshhold levels" for wildlife forage or population are set to protect wildlife from shortages of forage (43 CFR 1601.5-4(a)(9)).	124	26. The need for "biological threshhold levels" for wildlife was recognized; however, it was determined that sufficient information necessary to set threshholds was not available. Objectives for allocating forage to meet big game needs were identified.
27. For example, the DEIS states that water developments would increase local wildlife populations (p. 164) but no supporting evidence is presented.	124	27. Water developments (reservoirs, wildlife guzzlers, etc.) have been proposed for areas currently lacking water. This should allow for expansion of small game and non-game species into presently unoccupied areas and help spread big game use more evenly across the lower winter ranges during the late fall periods prior to snowfall and during the spring months after snow melt but prior to the time they return to the higher summer ranges.
28. The PA specifies three fewer sites for the reintroduction of peregrine falcon than even the EDA recommended.	125	28. These three sites were eliminated from the Proposed Plan (FEIS) because of the potential conflicts with oil shale development.
29. It is misleading, for example, to state on page 90 that zoning classifications for utilities facilities in Castle Peak would protect elk calving areas, without also pointing out the opposite effects of roads and human use on calving grounds. It is likewise misleading to declare that aquatic wildlife would be adversely affected by wilderness designation because improvements would not be possible (p. 90), without mentioning erosion and other adverse impacts to aquatic habitats from roading.	125	29. Roads constructed and maintained with adequate design considerations are expected to have minimal adverse effects on aquatic habitat. Elk calving grounds would be avoided (see Appendix B, FEIS).

Table 7-3. Comments and Responses—Continued

Comment	Raised By (index number)	Response
30. Roading for the purpose of wildlife habitat management is another debatable issue. Wildlife experts agree that elk need the cover and thermal barriers provided by dense tree stands and also the mobility and browsability provided by open meadows. The question is in what combination. The Technical Supplement does not indicate whether the balance of these needs is currently deficient in Castle Peak or whether correcting any identified imbalance by roading would outweigh the adverse impacts (noise and stress) on wildlife of these very same roads and human activity. The substantial short-term decline in big game, described in the Technical Supplement, would take a large toll on the local economy, while the projected long-term gain in big game is highly questionable, considering that there is no plan to close the roads after habitat improvements and timbering are completed. Rather, they will be left open for ORV use, continuing the impacts of noise and stress associated with human use. Also not mentioned in the Technical Supplement is that the long-term gains in big game will be at the expense of wildlife diversity which now thrives in Castle Peak's undisturbed ecosystem.	125	30. Under the Proposed Plan (FEIS), public access into the Castle Peak area would be limited to designated roads and trails (see Map 3-15, FEIS). In addition to the above limitations on access, if it became necessary, other limitations outlined in Appendix B (FEIS) could be applied. These stipulations include but are not limited to seasonal closures. This access is required for management of other resources. Public access often allows better big game harvest thus reducing the pressure on the winter range for food. It should be noted that the decision on the location, number, and type of roads into an area will be made through a site-specific analysis prior to implementation of a project.
31. The PA drops the RPA's plan to introduce big horn sheep into the Government Creek area. The RPA's big horn sheep introduction plan should be adopted in the final RMP, and with it, a clarification as to how it would be accomplished in an area which is identified on Map 3-9 for coal management. In dropping the introduction site indicated in the RPA (Map 3-11), the BLM is denying the Colorado Division of Wildlife's request for this site as a transplant area. This site has been CDOW's number 1 priority for such a program in its northwest region since 1979, and we are disappointed that after stalling on CDOW's repeated requests, the BLM has apparently made its refusal final. Big horn sheep range has suffered severe restrictions in the last 70 years of fire control practices, and new range is badly needed. No other potential range has been identified in the Glenwood Springs area. The loss of this site will be a loss to the immediate community, as well as to the State as a whole.	109, 125	31. The Proposed Plan has identified that portion of the Grand Hogback between Rifle Gap and Monument Peak as a bighorn sheep study area (see Map 3-6, FEIS). The plan proposes a two-year timeframe to intensively analyze the area for potential for a big horn sheep introduction. The analysis would include an evaluation of forage availability for livestock and big game and possible conflicts between them, adequacy of water, affects on livestock permittees and adjacent land owners, anticipated problems that might arise if the coal resources were to be developed, and other considerations. After the required information has been gathered or at the end of the two years, whichever comes first, a final decision would be issued based upon this information.

Livestock Grazing Management 1. Your Preferred Alternative management plan projects a 68 percent reduction in our two grazing allocations from 34 AUMs down to only 11 AUMs. Such a severe curtailment would eliminate our economic ability to maintain our registered breeding program. Frankly, for all practical purposes, the present small allotment of just 34 AUMs is already restrictive to our 20 cows, and any further reduction would immediately jeopardize our select, championship herd. (Surely, the very little difference between our limited grazing of 17 to 18 cows/heifers over several thousand acres and your suggested reduction to 5 or 6 animals isn't going to noticeably affect the State of Colorado's wildlife program in the vast King Mountain unit—nor will the continuance of our relatively light use cause any conspicuous impairment of their program.) However, implementation of your proposal will decimate our registered herd and force us out of the pure-bred business. Accordingly, we are requesting your consideration not to make any cutbacks of the existing 34 AUMs in our two small grazing allotments.	1	1. The difference between grazing 18 cattle and 6 cattle on allotments 8603 and 8657 or any other specific allotment may not have a noticeable effect on the State of Colorado's wildlife program in the King Mountain Capability Unit. However, the differences between the present livestock numbers and the Preferred Alternative (DEIS) numbers on the combined allotments in the capability unit would have a noticeable effect. The Proposed Plan (FEIS) considers the forage necessary in the entire unit. The initial allocation shown in the DEIS is based on our inventories. Under the Proposed Plan (FEIS), reductions, if necessary, would be based on monitoring actual livestock use on each allotment and could be phased in over a five-year period.
2. Also, grazing will take away food from the deer. I feel strongly about this area, and it would be well worth setting the entire area aside for wilderness so all can enjoy it without any further disturbances of added pollution.	27	2. All alternatives show there is enough forage for livestock and wildlife in Bull Gulch. We would monitor both livestock and wildlife use in the area upon implementation of the Proposed Plan (FEIS). If livestock were found to be taking forage allocated to wildlife, livestock grazing would be reduced.
3. The livestock grazing section goes on to say that 51,952 acres would be vegetatively manipulated, resulting in a 50 percent AUM increase. This is more than the Preferred Alternative offers: Is it then correct to say that big game is given priority for forage allocation?	29	3. There are different goals for both livestock and wildlife under the various alternatives. The reason the animal-unit month (AUM) numbers in the Preferred Alternative are higher than those in the Resource Protection Alternative (DEIS) is that the goal is higher. In none of the alternatives was the goal for livestock for the entire resource area met. It is correct to say big game was given priority in forage allocation under the Resource Protection Alternative, as explained in Appendix F (DEIS), page 201, but not under the Preferred Alternative (DEIS) or Proposed Plan (FEIS).
4. "Existing Livestock Use" is not defined in the glossary. I expect "Actual Use"—defined—was intended to mean existing use. Clarification should be made.	44	4. Existing use was inadvertently omitted from the glossary. It has been added in the FEIS. It is defined in the footnote to Table F-1, DEIS. Existing use is the average of licensed livestock use from 1975-79. It is not synonymous with actual use.
5. Existing use total is 37,408 from a summary made of Table F-1, not 37,709 shown. Initial allocation is 28,271 from same source, not 26,443 shown. What is the discrepancy? There are several voids in Table F-1 which causes the change in Existing vs Initial allocation to not add-up. Errors may also play some part such as opposite allotment number 8029 where under the C.C.M. Alt. the change should be −113.	44	5. Several errors in the DEIS tables have been corrected in the FEIS. In addition, Table F-1 has been moved into Chapter 3 in the FEIS (see Table 3-7). The voids in the table were due to making available AUMs for livestock in unallotted allotments where there is presently no grazing, thus no change in use is attributed to a specific permittee.

Table 7-3. Comments and Responses—Continued

Comment	Raised By (index number)	Response
6. A conservative cost estimate for this typical allotment range improvement project is nearly $350,000. (10 mi. of fence at $3.50/ft., 1 ea cattle guard at $700, 1 ea corral at $250, .25 mi. of stock trail at $4/ft., 5 ea reservoirs at $2,000 ea, 5 ea springs at $1,000 ea, .75 mi. of pipeline at $7/ft., 400 acres of vegetation manipulation at $200/acre, 100 acres of seeding at $300/acre). This is $70 per acre on a 5,000 acre allotment. Who is responsible for the cost of these improvements, and have they agreed to pay this expense?	44	6. The cost of most improvements on allotments would be borne by the BLM with funds returned from grazing fees and appropriated funds. The grazing advisory board would pay some costs with funds returned from grazing fees, and individual ranchers would pay a portion of the costs. The BLM would pay as the budget allowed. The advisory board and individuals have not been asked to pay; however, they have been funding improvements over the years. These figures are higher than BLM expects based on past experiences with these types of developments.
7. What is the correlation between projected allocations on Table 3-6 and potential allocations on Tables J-1, J-2, J-3, and J-4?	44	7. They are the same. Table 3-6 (DEIS) shows totals for allotments in the resource area. Tables J-1, J-2, J-3, and J-4 are based on Table F-1 but are broken down by ranch size rather than by allotment.
8. The BLM lands below 8,000 ft. elevation have a natural evaporation rate considerably in excess of the precipitation. (Information conspicuously absent from the EIS.) Consequently, this area is a naturally fragile desert environment which should never have been grazed by domestic livestock, but continues to be overstocked.	71	8. The climate of much of the resource area, particularly below 8,000 feet is classed as semi-arid. While it is true that evaporation exceeds precipitation in a semi-arid climate, the precipitation is sufficient to support vegetation that can be grazed by livestock as long as the livestock grazing is carefully managed.
9. Of substantial social and political influence is the value of grazing permits pledged as collateral to loaning agencies. Pertinent information conspicuously absent from the EIS.	71	9. Grazing permits do have value to the total ranch operation. They are considered by lending institutions when the private land is pledged as collateral for loans and may be of significant value to individual ranchers when used as such. However, the primary measure of economic impact is the change in net revenue induced by a change in forage allocation and that impact was evaluated.
10. If the billions of dollars of downstream natural resources now being jeopardized as a result of domestic livestock grazing on the watersheds of the Glenwood Springs Resource Area are to be permanently preserved and protected, the domestic livestock must be removed from these watersheds.	71	10. Livestock grazing at proper stocking rates (to be determined through monitoring) would not adversely affect water quantity or quality in the Colorado River. Downstream natural resources probably would not be adversely affected by proper grazing.
11. Will grazing fees pay for the necessary vegetation manipulations, riparian zone fencing, and other range improvements? If not, how do the present fees of $1.45/AUM compare with grazing fees (or costs) on private range of comparable quality in the region? Factoring in these questions, and considering that livestock enhancements conflict with wildlife (which is already suffering from reductions in winter range), and considering further how much more the local economy is enhanced by wildlife-based recreation than by livestock production (compare the socio-economic impacts of the PA and RPA on pp. 175 and 127, respectively), it appears that only the RPA of all the alternatives makes overall sense.	76	11. For the forseeable future, the only funds available for range improvements will be from grazing fees and private contributions. The use of these funds are continuing on cost-benefit analysis. Some appropriated funds may eventually be used for range improvements. An annual report of private land lease rates is available from Statistical Reporting Service, U. S. Department of Agriculture.

12. More importantly, experience has shown that the best way to acquire a proper balance between the needs of the permittee and the competing uses of the grazing land is a case by case review jointly by the permittee and the BLM on an annual basis and not by an arbitrary limit as proposed on Table F-1 of the Draft Environmental Impact Statement. Arbitrary limits, or limits which are set by alleged historical data (often incorrect), does not allow the BLM the flexibility it needs to permit increased livestock grazing in years when forage is abundant and decreased livestock grazing in years of drought and the like. If arbitrary limits must be set, they should be set at the highest conceivable usage so that the BLM is not foreclosed by its own limits from permitting maximum grazing in good years.	81	12. Under all alternatives in the DEIS and the Proposed Plan (FEIS), we would monitor annually to determine proper stocking rates and make adjustments as necessary.
13. Explain why only 8 AMPs have been prepared for 175 ranchers.	86	13. Eight allotment management plans (AMPs) were completed by the early 1970s prior to the Natural Resource Defense Council et. al. suit requiring BLM to complete grazing EISs. The others are pending completion of this EIS.
14. Only 7 percent of the 168 permittees grazing needs are satisfied by BLM lands. There should be a section on economic viability of various sized ranches.	86	14. An analysis of a ranch's economic viability would have no effect on our grazing decisions; therefore, we felt it was not a necessary part of the EIS.
15. No detail is offered on costs of range improvements such as manipulation, pipelines, water, fencing, etc. The number or the amount of such improvements is not given. We are asked to accept the plan, with no cost effectiveness study or knowledge of what the direct subsidy to the 175 permittees will be. Past experience tells us it will be anywhere from $30,000 to $50,000 each, plus increased values of their base property due to 37 percent increase in BLM grazing capacity.	86	15. The livestock grazing portion of the DEIS is different from past grazing EISs in that specific AMPs are not the proposed action. When AMPs are written, a site specific cost-benefit analysis will be done for each project and the AMP as a whole. The objectives in the AMPs will be based on decisions from the Proposed Plan.
16. How can BLM justify a 3 percent increase above existing use for livestock in the Preferred Alternative? How can an almost immediate increase in forage allocation to livestock be implemented when there is existing deterioration in range conditions?	124, 125, 129	16. There has been some confusion in BLM's use of the term existing use for livestock in the DEIS and how it relates to active preference. This was clarifed in the Proposed Plan (FEIS). Basically, existing use is the 5-year average number of AUMs permittees have actually used, whereas active preference is the number of AUMs permitees could use if they chose to. The Preferred Alternative (DEIS) recognizes the present situation in relation to active preference. Many permittees have been taking non-use voluntarily for a variety of reasons for a number of years. While the Preferred Alternative initial allocation shows a 3 percent increase above existing use, it is also a 45 percent reduction from what permittees could presently use if they wanted to. These figures are for the resource area as a whole. Individual allotments show some significant reductions from existing use where sufficient production is insufficient to continue that level of grazing. Table F-1, in Appendix F, DEIS, shows what each allocation would be. We only expect to satify 89 percent of active preference under the Proposed Plan.
17. The conclusions reached with respect to range land use are so general as not to be meaningful. For instance, the King Mountain permit that we lease from you varies in elevation from 9,000 feet to 10,500 feet. To suggest that this is winter feed area for deer and elk is preposterous. As you well know, deer and elk do not winter in three to six feet of snow.	89	17. The permit on King Mountain is not considered winter range for deer or elk. The King Mountain Capability Unit covers much more than the mountain itself (see Map 3-7, FEIS), including a considerable amount of big game winter range. Reduced AUMs shown for this permit are due to stocking rate limitations, not wildlife winter range.

Table 7-3. Comments and Responses—Continued

Comment	Raised By (index number)	Response
18. The City is an interested party with regard to grazing allotments in the ACEC and requests consultation upon any changes in this and other management practices.	90	18. BLM will consult with the city of Glenwood Springs on management practices when the area of critical environmental concern is set up and on any proposed changes in the management (see page 19, DEIS).
19. Table 3-28 on pages 48-59 includes analysis of a No Grazing Alternative which does not appear in any other part of this document. We believe the final EIS should thoroughly examine this alternative in the same manner as the others, or it should be eliminated from Table 3-28.	93	19. Table 3-28 (DEIS) shows only the summary of each alternative. The No Grazing Alternative is required as a result of the agreement between BLM and the Natural Resources Defense Council et al. for Grazing EISs (see page 60, DEIS). As mentioned, it was felt to be unrealistic for the resource area as a whole and was not carried forward for consideration; however, the summary of impacts is valid.
20. The preferred alternative, livestock grazing, for allotment No. 8908, JQS common pastures on Naval Oil Shale Reserve, shows the initial allocation of AUMs under this alternative would result in a reduction of 1,140 AUMs or 43 percent less than current existing use. Considering the present use does not utilize the more than adequate available forage now, I suggest this recommended initial allocation reduction is unwarranted. In addition, it will impose a significant financial hardship on the permittees at a time when the cattle business is difficult enough. Personal observation leads me to conclude that the amount of forage available from these pastures can be increased to meet the demand of the projected allocations (a significant increase over existing use) without the reduction in the initial allocation. This can be accomplished using a combination of vegetative manipulation, forest management, and water yield management processes.	104	20. The initial allocation of 1,484 AUMs was based on our information of stocking rates for the range sites and condition classes mapped in the JQS allotment. As explained in detail under the Proposed Plan (FEIS), any reductions required would be determined through monitoring and phased in over a period of time. We, too, feel there is potential for increased forage production in this allotment.
21. On page 55, under Preferred Alternative, Livestock Grazing, the implication is made that October 15 and November 15 are arbitrary cut-off dates on allotments. This may be my misunderstanding; I would hope that turn-on, turn-off dates are established by your staff in AMPs based on best management practices with each allotment analyzed on its own.	118	21. The fall cut-off dates were based on attempts to minimize competition with wildlife. The effectiveness of these dates would be evaluated during monitoring and adjusted if necessary.
22. Thus, to accurately evaluate the proposed AUM increases and vegetation production in this summary section, pounds in production of forage of this resource area should be reported and proposed increases documented on similar sites.	121	22. Methodology for determining increases is explained in Appendix F, DEIS, page 204. Not clear from that explanation is that the figures for minimum forage increases expected were developed from the literature with some extrapolation for this resource area. We will be doing cost-benefit analyses as we develop the AMPs and implement projects. Actual costs and increases from the first projects will be incorporated into the subsequent ones. If these estimates are optimistic, they will be corrected through experience.
23. How does the directive from the Naval Oil Shale administrators stating that range improvement expenses must be self supporting by use of grazing fees, etc., affect this resource management plan?	121	23. The existing Memorandum of Understanding does not require the program on the Naval Oil Shale Reserves to be self supporting.

24. Under Comparative Analysis, Table 3-28. Summary of Major Actions and Impacts, pages 52-55. This table is very difficult to interpret in a meaningful way. Example: when you compare livestock grazing of the Continuation of Current Management Alternative with Preferred Alternative, you project a 37 percent greater use than existing use. What is your data base for this projection—does it refer to herb, shrub or woody vegetation, winter use or summer use; is this usage computed from measurements of air dried forage or is it based on Soil Conservation (SVIM) data; and are your conclusions based only on a 1 year vegetation study July to October, 1979 (see page 203)?	121	24. All comparisons in the Summary Table 3-28 for livestock grazing are based on total annual forage production. That production is approximately one half of the total production of all plants (grasses, forbs, and shrubs) that livestock or wildlife eat and is derived from the 1979 SVIM inventory, U. S. Soil Conservation Service stocking rate guides, and knowledge of the area. Production potential is based on range site descriptions and stocking rate guides.
25. Tables F-1 and F-2, pages 206-217. Livestock and Wildlife Forage Allocations and Impacts. These tables represent a good exercise in extrapolation mathematics. I do not believe accurate data exists to support the detailed extrapolation as is reported in Table F-1, and I am positive it is not available for that reported in Table F-2. Thus, I would suggest including only projected ranges of allocations in a short summary as one could determine from scattered data and best estimates.	121	25. The tables were developed to portray for each allotment our best estimate of what amount of use could be made by livestock and wildlife based on our data. Monitoring will be used to establish final allocations.
26. In summary, I would like to see more evidence as obtained from solid baseline studies included within the EIS to support the various alternatives suggested. The absence of such baseline data and clear explanations, as referred to, weakens the report—realizing, of course, that your agency has done considerable resource planning with the information available.	121	26. BLM realizes additional information on livestock forage gained through monitoring is required prior to final allocations.
27. Although ranching admittedly retains an important role in the area—supporting long-time residents, giving the area the rural western character that attracts tourists, and providing a buffer between resort areas and energy development—the 167 ranch operators using BLM lands rely on this range for an average of only 7 percent of their total forage needs (p. 76). Moreover, the adverse impacts of grazing reductions or adjustments would be mitigated by several factors. First, the 17 percent reductions proposed under the RPA would represent only 1.19 percent of total forage needs (7 percent of 17 percent). Secondly, no reductions would occur until monitoring has taken place, according to the DEIS, providing a transition period during which alternative forage could be arranged (p. 125).	124	27. Here, again, the term existing use is misleading. The initial allocation would be 17 percent less than existing use but 45 percent less than active preference. Further, the percentages are for the resource area as a whole. Individual allotments would be severely impacted by the Resource Protection Alternative (DEIS). While the total forage represented might be only 1.19 percent, a number of individual operations would have quite sizable forage reductions.
28. Just as importantly, the proposals to increase livestock forage, like proposed water yield projects, also lack adequate supporting data or analysis to indicate that they are feasible and would not result in additional adverse impacts (43 CFR 1601.5-6 and 40 CFR 1502.16).	124	28. BLM has made a preliminary analysis of soil survey information as explained in Appendix E, DEIS, pages 204-5, to determine where vegetation manipulation is feasible. Also, these areas were then evaluated for other resource conflicts during the planning process and further reduced or methodology constrained to eliminate or minimize impacts so that for each alternative the areas that could be treated were compatible with the alternative.

Table 7-3. Comments and Responses—Continued

Comment	Raised By (index number)	Response
29. First, the document does not contain enough site-specific information on such factors as the grazing capacity under current conditions, the suitability of allotments for grazing, nor is there even an explanation of why this information is missing (43 CFR 1601.5-2(b)(5)(i), (ii), (iii).	124	29. BLM's estimate of grazing capacity under current conditions is the initial allocation for the Continuation of Current Management Alternative (Table F-1 and p. 5-15, DEIS). Descriptions of the Alternatives, page 26, DEIS, states that under all alternatives except No Grazing, livestock grazing would continue. Although it does not specifically state it, we propose to continue grazing to some degree on all allotments except 8916 with some improvement work. Several allotments would have only a few AUMs use, but the permittee would make the decision not to graze. We have limited areas due to slope. See Appendix F, DEIS.
30. The DEIS is not specific about what BLM is proposing to do about the existing situation except for vegetation manipulation and classification. The DEIS specifies limited changes in livestock grazing during big game crucial use periods (p. 24) but is unclear about other changes in the grazing system (p. 167). Although estimates are given of the total acres upon which vegetative manipulation would occur under each alternative, there is no mention of the specific type and degree of the management practices (outlined in Appendix A) which are assumed to contribute to increased grazing capacity.	124	30. The management actions during big game crucial use periods were inadvertently omitted from the DEIS. They are incorporated in the FEIS, Chapter 3, Livestock Grazing Management. No specific actions are outlined since they would vary by allotment and would be determined when AMPs are written.
31. For these reasons, and because of the dubious advantage (to soils, wildlife diversity, etc.) of large scale vegetative manipulation, the Colorado Wilderness Network recommends a range improvement program considerably more modest than those of any of the alternatives. No more than slight increases in livestock and wildlife are needed for economic stability, while reduced forage production goals would, in our opinion, represent a more plausible Resource Protection Alternative.	125	31. BLM feels a need exists for the range improvement program proposed. BLM also feels that a range improvement program will benefit livestock and wildlife. The implementation period has been extended from 10 to 20 years under the Proposed Plan (FEIS) which would further reduce any adverse impacts.
32. UOC supports the Preferred Alternative as set forth in the EIS, Glenwood Springs Resource Area, for livestock grazing. This alternative would permit accommodation of Active Livestock Preference for the economically depressed livestock industry, while improving range conditions by increasing the forage quantity and quality. This alternative also assures wildlife forage availability while maintaining a forage level for greater prevention of fire losses.	126	32. Some changes were made under the Proposed Plan (FEIS). These did not affect livestock but gave additional forage to wildlife.
33. The preferred alternative also fails to mention the increased costs associated with a 37 percent increase in livestock grazing in the Glenwood Springs Management Areas. The cost-effectiveness of items such as range improvement and water for livestock, fencing, pipelines, and other facilities have not been addressed.	129	33. Because of the level of detail in the DEIS, it was not possible to generate costs for the specific elements in each alternative. Further planning to determine specific engineering type recommendations will be required to estimate costs. Such a wide range of costs could be estimated based on current recommendations that a comparison between alternatives would be of little value.

Vegetation Management The section on threatened or endangered species (DEIS, p. 73) adequately describes the known listed and sensitive plant taxa in the Resource Area. However, I am concerned that the language contained in the "impacts on vegetation" section (DEIS, pp. 120, 145, 169)—"No adverse impacts would occur to *known* (my emphasis) occurrences of threatened or endangered plant species from any management action that has identified a site-specific project location. Threatened, endangered, or sensitive plant species would be protected from adverse impacts of management action through activity plans and environmental assessments when specific site locations are identified," refers only to those localities which are already known to the Resource Area. The ambiguity of the language contained in the DEIS could be clarified by describing an intention to inventory rare plant or exemplary ecosystems.	83	BLM does not intend a resource area wide inventory for rare plants. When a project is proposed or likely near a known occurrence of a threatened, endangered, or sensitive species or in its habitat, BLM would survey the site for the species. We have a listing of locations of these species for the Glenwood Springs Resource Area from the Colorado Natural Areas Program, State of Colorado.
Forest Management 1. It is unlikely that the Castle Peak timber operation would be able to operate at a profit. All of the timber operations in Colorado are subsidized by our tax-paid dollars. New roads would have to be built which could lead to even higher erosion than presently exists.	22, 62, 2	1. Determination of the economic value of timber is not solely made on the basis of local or short-term economic conditions. If the timber resource satisfies the physical criteria necessary for economic value—sufficient timber size and density to offset any physical and environmental constraints—the harvest of that timber is considered under long-term economic conditions. In addition, for Castle Peak, the erosion condition class (Map 4-2, DEIS) is moderate (an annual soil loss per acre of 5 tons), and the sediment yield is very low (less than 0.28 ton of soil loss per acre per year). Construction of new roads would increase erosion and sediment yield; however, construction standards and water run-off structures would be implemented to minimize these soil and water resource impacts. Commercial forest land and woodland would be managed only on sites suitable for management and absent of fragile or constraining resource values.
2. The area is of highly erosive nature and, therefore, the cutting out of trees would only make the erosion worse. High quantities of silt would pour into the Eagle River affecting areas far away, while the White River National Forest allows for sufficient timber harvest.	23	2. Because BLM's forest resource is not as large as that administered by the U. S. Forest Service does not mean we should neglect the resource we are responsible for managing. See also response to comment 1. The FEIS has not been changed.
3. The Bureau of Land Management points out that there is high timber potential in the (Castle Peak) area. I can only disagree with this. I do not believe that there is a great timber potential here. There is definitely no more (here) than in any other place in the Glenwood Springs Resource Area.	23	3. The commercial forest land on Castle Peak represents 22 percent of the total commercial forest base in the resource area. The 42.5 million board feet of spruce-fir on Castle Peak represents 56 percent of the total spruce-fir volume in the resource area on public land. Therefore, the forest management proposal has not been changed in the FEIS.

Table 7-3. Comments and Responses—Continued

Comment	Raised By (index number)	Response
4. The BLM claims that these resources will be foreclosed with wilderness designation. Why, then, did they not consider the availability of timber elsewhere in the resource area that could be used without harm to this unique and irreplaceable wilderness.	28	4. The availability of sawtimber and woodland exists elsewhere in the resource area. The majority of the sawtimber (which is primarily Douglas-fir) found in the Bull Gulch wilderness study area (WSA) is considered unsuitable for management because of fragile soils and inaccessibility. The amount of manageable or suitable sawtimber (615 acres) is insignificant. For woodland, 1,765 acres of pinyon-juniper are suitable for management which could annually yield 500 cords. The woodland pinyon-juniper in this area is characterized by stable soils. This acreage (1,765 acres) represents 6 percent of the manageable pinyon-juniper in Eagle County. Access exists to a large portion of this manageable pinyon-juniper, thereby increasing its overall manageability.
5. Let's look at the implications of timbering in the Bull Gulch WSA. Having been there myself, I can truthfully say that the sawtimber is too inaccessible and on too steep a slope to be economically feasible. Its field resources are insignificant to the local economy.	28	5. With the wilderness designation in the northern portion of Bull Gulch (north of Alamo Creek), all commercial forest and woodland stands were deleted from this area under the Proposed Plan (FEIS). These stands were removed from the forest base due to wilderness management restrictions. However, the southern portion of Bull Gulch (south of Alamo Creek) was proposed unsuitable for wilderness designation. The majority of the forest stands in this area consist of woodland, primarily pinyon-juniper. Woodland products such as fuelwood and fenceposts are presently in demand, particularly in the Eagle-Vail area where a $135 price (commercial retail) for a cord of pinyon is not uncommon. A portion of these stands is presently accessible using existing roads.
6. Now, the White River National Forest, the White River Plan has not yet come out. However, I would suggest that a call to the Forest Supervisor's office in Glenwood might be revealing in terms of what the supply is in the forest immediately around—and what the demand is for the area.	62, 63, 125	6. One of the BLM's timber management goals is to contribute to meeting the Nation's demand for wood products by increasing the timber productivity of its forest land. To ignore the management of forest land because of an unfavorable supply-demand situation in the present could very well adversely impact the local and national supplies of wood products in the future. According to the Draft White River National Forest Plan and Environmental Impact Statement, the forest has an average annual harvest of about 14 million board feet. A U. S. Forest Service demand analysis completed in December 1981 identified a forest demand in late 1981 and 1982 of 16.4 million board feet for live sawtimber and 22.0 million board feet for dead timber. The BLM Proposed Plan (FEIS) calls for an annual allowable harvest of 1.8 million board feet.

7. Finally, we have Castle Peak. This area north of Eagle also has very high wilderness attributes. Here the problem, according to the Wilderness Suitability Analysis, is the conflict with the timber; and while timber is a resource that is needed by some people, particularly for fuelwood as other sources of heating become more and more expensive, I really question whether this could not be better found elsewhere.	67, 62	7. Castle Peak has 9,454 forested acres of which 4,810 acres are considered commercial forest land (Engelmann spruce and Douglas-fir). These 4,810 acres have a present volume of 45.2 million board feet. The majority of this volume is made up of dead spruce, killed in the spruce beetle outbreaks of the 40s and early 50s. This dead sawtimber resource is presently in relatively high demand locally as fuelwood and rough dimension lumber. Management of the spruce-fir type on Castle Peak is important. Due to the spruce beetle outbreak, very little live mature spruce remains compared to the abundance of live subalpine fir. With the decline of the spruce stands, subalpine fir has replaced the spruce as young saplings and poles in the understory. As spruce is a relatively high-valued timber species and subalpine fir is considered a noncommercial forest species, this fir sapling growth is undesirable. Management actions should be geared toward spruce reforestation and promotion of a spruce-fir type and not just a fir monoculture.
8. There is an uncertainty as to whether once timber is cut that it can be regenerated either naturally or by planting because of the unstable soils and the steep slopes and the high altitude and all that. And also, several other people have mentioned this already. The economics of timber cuts in Colorado basically amount to a subsidy to the timber industry, and I don't think we need to do that.	67, 117	8. The large volume of dead spruce on Castle Peak creates a challenging forest management situation for the BLM. With the loss of the spruce sawtimber to the spruce beetle in the early 1950s, a viable Engelmann spruce seed source was also lost. The residual subalpine fir has naturally regenerated the majority of the area to primarily subalpine fir—a noncommercial forest species. In order to restore the area to its fullest forest productivity, the growth of Engelmann spruce would be promoted while the advanced regeneration of subalpine fir would be controlled. Site indices indicate that the forest sites on Castle Peak are productive and manageable. The challenge would be to restore these sites to their productive commercial capabilities. Such restoration would be a lengthy process. In the interim, salvage of the standing dead and down spruce would help promote the manageability of the area while reducing the forest fuels. Despite nationally depressed markets, the local demand for dead sawtimber and fuelwood is increasing. See also response to comment 1.
9. Use of selection cutting should be qualified. This method can lead to high-grading and deterioration of the genetic quality of the trees on a given site unless healthy and vigorous seed trees are left for revegetation.	76	9. The use of selection cutting, or any harvest method for that matter, is qualified through the environmental assessments of individual harvests or sales. Your concern about high-grading and deterioration of future stands is understandable. BLM management intends to promote the health and vigor of present and future stands through the use of proper silviculture. In certain instances, selection cutting can be the proper silvicultural treatment for a stand.
10. Timbering is proposed to be done at levels considerably above regional needs for firewood and sawtimber, and will have adverse effects on other economically and esthetically important outputs like wildlife, water quality, and primitive recreation.	76	10. The effects of forest management on other resources are not greatly significant as evidenced in the Environmental Consequences section (DEIS and FEIS). Site-specific environmental assessments, along with standard operating procedures found in Appendix B (FEIS), would be written and reviewed prior to on-the-ground implementation to further minimize resource degradation or enhance resource values. See also response to comment 6.

Table 7-3. Comments and Responses—Continued

Comment	Raised By (index number)	Response
11. Proposed harvests in some alternatives for greater than 40 degree slopes are absolutely unconscionable in our view—how can the BLM justify the environmental havoc that would be caused by such harvests? In addition to a smaller slope cutoff, the BLM should also use a site productivity index to identify suitable timber lands: we suggest an index of at least 20 cubic feet per acre per year.	76	11. The proposed harvest levels under the Resource Protection and Economic Development Alternatives (DEIS) and under the Proposed Plan (FEIS) include (to varying degrees) the management of suitable forest land on slopes of 40 percent or greater. These levels were proposed under the Resource Protection and Economic Development Alternatives to assess the environmental and economic impacts of such management. A small percentage of commercial forest land on relatively steep terrain under the Proposed Plan was included in the management base in areas where resource values were not limiting, fragile, or critical. Where resource values were not fragile, critical, or limiting, commercial forest land and woodland was considered suitable for management. Where resource values (watershed, soils, visuals, etc.) were fragile or critical, forest land was identified as unsuitable for management. The BLM does use a site productivity index to identify suitable sawtimber (commercial forest land), and the index is based on growth rates of 20 cubic feet per acre annually or greater.
12. The first question that must be answered (and which is not in the DEIS) is: What is the real demand now and in the future for firewood and sawtimber? Apparently, a harvest of only 0.7 MMBFY (p.122) and 1000 cords of firewood (p.73) is necessary to meet local demand, although it is not made clear whether this is the total demand in the area or only that which BLM supplies. The 0.7 MMBFY figure is itself contradicted elsewhere (p. 171, where 1.8 MMBFY is declared to "meet local needs").	76	12. A BLM harvest of 0.7 million board feet of sawtimber and 1,000 cords of fuelwood annually would not likely meet all demands for sawtimber and fuelwood and would somewhat limit the options for timber supply in the region (p. 31, DEIS). The contradictions on pages 122 and 147 (DEIS) in regard to meeting local demands for wood products have been noted in the Errata, Appendix L (FEIS). See also response to comment 1.
13. Why, under such conditions, the BLM plans to double or triple the allowed harvest over and above needs in the PA is not explained. No doubt any timber sold will be substantially discounted, and so compete with sawtimber and firewood from private lands—hardly an example of the much touted "good neighbor policy!" It should also be pointed out that firewood use will not increase as fast as the population in the GSRA because of present wood-burning-related air pollution problems in urban areas like Vail and Aspen.	76	13. The annual allowable harvest for sawtimber under the Proposed Plan (FEIS) is very similar to the current harvest level (1.75 million board feet vs. 1.8 million board feet). Harvest levels were increased under the Economic Development (6.3 million board feet) and Resource Protection Alternatives (4.0 million board feet) in the DEIS based on the criteria explained in Chapter 3, Description of the Alternatives (DEIS). Fuelwood demand has increased significantly in recent years, particularly for pinyon pine. The total woodland annual harvest level proposed under the Proposed Plan (FEIS) is 6,465 cords (3,535 cords of pinyon-juniper and 2,930 cords of aspen and subalpine fir). It is believed that the 3,535 cord pinyon-juniper harvest level would help meet the regional fuelwood demands, particularly for pinyon-juniper cordage in the next 10 years. The present demand for aspen and subalpine fir is low. The present and projected fuelwood market is not limited to Vail, Aspen, or Glenwood Springs. Future fuelwood demands from the Front Range are expected.

14. Bull Gulch and Castle Peak WSAs will both suffer from proposed timber management policies in the PA. On Map 4-2, the erosion condition class of the Castle Peak area is poorer than that in the King Mountain area, suggesting that any timbering should be done there first. The omission of 4,786 acres of the Bull Gulch WSA from the semi-primitive non-motorized recreation category (p. 177) because of timber harvest is not warranted by the somewhat scattered and hard-to-access fuelwood resources of the area (Map 3-18).	76	14. Forest management has been and is being implemented on King Mountain. A portion of the pinyon-juniper stands in the southern half of the Bull Gulch WSA is presently accessible using existing roads. These scattered stands represent approximately 1,765 acres of suitable pinyon-juniper, which could annually yield 500 cords. These stands represent 6 percent of the manageable pinyon-juniper forests in Eagle County. See also response to comments 1 and 2.
15. The aspen that would be cut in the process has no value on the timber market and would yield only marginal wildlife and domestic forage benefits. The Draft states that low timber harvest levels (.7 MBF sawtimber and 2,650 cords fuelwood annually) would meet local timber demands. Given this, and the generally depressed state of the local timber industry, we see no justification for increasing timber targets to 1.8 MBF sawtimber and 3,535 cords fuelwood annually. We believe that vegetation and forest manipulation programs should concentrate on preserving and improving existing wildlife and domestic forage resources rather than subsidizing a timber industry which shows no signs of expanding to deal with increased supplies.	84	15. The local market for aspen is weak; however, aspen is used locally as a source of domestic fuelwood. The benefits of harvesting aspen are increased timber revenues, enhanced wildlife and livestock forage, increased health and vigor of the stands, and minor increases in water yield. An error was made in the DEIS regarding statements about harvest levels and local demands for sawtimber and fuelwood. The discrepancy has been resolved in the FEIS, and the corrected statements are noted in Appendix L. The present allowable harvest level, which has been in effect for the past six years, is 1.75 million board feet annually. The harvest level under the Proposed Plan (FEIS) is 1.8 million board feet—a possible increase in harvest level.
16. It would be helpful if the BLM and the Forest Service could work together to assess the likely demand for timber in the area and primitive recreation in the area and plan together to minimize roading.	109	16. Coordination on road system construction and design has occurred between the U. S. Forest Service and BLM in an effort to minimize logging and hauling costs. This coordination will continue in the future.
17. Firewood cutting should be restricted to specific areas during the big game seasons.	19	17. Fuelwood cutting on public land is limited to specific areas not only during big game seasons but also throughout the year.
18. Red Hill is a serious area of concern to Carbondale. The area is identified on all alternatives as suitable for fuelwood sales. The Economic Development Alternative also shows fuelwood areas in excess of 40 percent slope. We could support very limited wood cutting which would have no visual impact from Carbondale. The Economic Development Alternative could not be supported. The Town would like to see the area maintained in a natural state and possibly developed as a passive recreation area in the future.	112	18. The proposed fuelwood management area on Red Hill would include only the areas identified under the Proposed Plan (FEIS). These areas (shown on Map 3-18, FEIS) have been identified as suitable for woodland (pinyon-juniper) management, which could include fuelwood, Christmas tree, wildling (transplant), and fence post sales. Management of pinyon-juniper is important not only to harvesting woodland products but also to maintaining or enhancing the health and vigor of the stands. Environmental assessments prepared prior to harvesting analyze management alternatives, resource impacts and resource values including archaeology, visuals, recreation, watershed, and soils. Visual impacts would be considered in an environmental assessment prior to any ground-disturbing activity.
19. The demand for wood products can be met by an annual harvest rate of 0.7 million board feet from 52,305 acres of forest (p. 122, DEIS). This does not include the Castle Peak Wilderness Study Area so Castle Peak could be left as wilderness without affecting water quality problems already existing in the Eagle River.	115	19. As stated on page 31 (DEIS) "Harvest Level 1 (0.7 million board feet per year) would not likely meet all demands for sawtimber and fuelwood and would somewhat limit the options for timber supplies in the region." Also, of the 52,035 acres cited on page 122 (DEIS), only 7,715 acres supports a sawtimber (commercial forest land) resource. See Table 3-8 (DEIS).

Table 7-3. Comments and Responses—Continued

Comment	Raised By (index number)	Response
20. How has the BLM come up with its timber and fuelwood demand figures? Without this information, it is hard to know whether to accept these numbers. Things are especially confusing because the DEIS states that four different numbers will each "meet the demand for wood products for the next ten years" (p. 99, 122, 171, 147). Do these demand figures reflect the recent drop in housing, local population expectations and the economy as a whole? Are they based on traditional markets such as farmers and ranchers or on potential new markets? Are BLM demand figures coordinated with the Forest Service, which is also in the throes of planning to meet unknown future wood products needs? Unless this is done, the market, which is already weak, could be flooded with wood. Shouldn't the sights be set beyond ten years? How much timber will be available then? Where will it be?	115	20. In regards to the demands for wood products, refer to the Affected Environment, Chapter 4, FEIS. A discrepancy existed in the DEIS (pp. 122, 147) regarding the demands for wood products. Appendix L (FEIS) notes the correct demands for wood products under the different alternatives. See also responses to comments 1 and 6.
21. On page 171 of the DEIS, it states: "By intensively managing forest land, productivity and revenues would increase." We were not aware that it was the BLM's responsibility to increase productivity and revenues. Rather, Congress has charged the BLM with managing all the resources of an area. As the highest demand figures would only bring in $81,000 in federal revenues (p. 174), why sacrifice our precious wilderness heritage for such a small profit?	115	21. Managing the present forest resource could yield $81,000 per year under the Proposed Plan (FEIS). These receipts are annual and could fluctuate with the market, up or down. These dollars could be realized with proper management. In addition, the manufactured products, when sold, could generate local community activity of $890,000, with direct and induced growth in personal income amounting to $337,000 and 31 man-years of employment. Just as importantly, or even more so, is the increased productivity and yields that could result from forest management. A properly managed stand can yield wood products on a sustained basis. A wood-fiber resource for the future, as well as the short term, is a BLM objective.
22. Further, I could not find a comprehensive cost/benefit analysis for development of the timber resource, specifically at Castle Peak and Bull Gulch. All management outlays including road construction, sale preparation, sale closing, clean-up and reforestation must be included in the cost figures.	117	22. The EIS does not directly analyze individual timber sales or projects on Castle Peak or Bull Gulch. Such an analysis would be included in timber sale environmental assessments and forest management plans. It is policy to implement only forest management activities that show a positive return on the investment.
23. When total costs are compared with the revenue from any timber sale, then a rational analysis can be made. Certainly current market conditions would not justify a sale at either location.	117	23. The local demand for dead, standing sawtimber is increasing. Local mills are favoring the dead timber resource over green wood due to its dryness and lighter hauling. The dead spruce sawtimber on Castle Peak would be a viable product under the present market situation. In addition, the depressed market that now exists is not a reason to forego forest management which could guarantee a forest products supply in the future. No change has been made in the FEIS. See also response to comment 22.

24. The amount of fuelwood harvest proposed in the PA may also be too high, considering that a growing woodsmoke pollution problem in the region may eventually cause a tapering off of demand for fuelwood. Also, the soil impacts from harvesting fuelwood are worse than those from harvesting sawtimber according to the DEIS. To aid the public in assessing proposed timber goals, the final RMP should include a detailed cost-benefit analysis, which includes not only anticipated revenues to the community and to the Federal Treasury, but estimated management costs of the various harvest goals. Considering the high cost of building roads, and possible future Forest Service budget cutbacks, it may be more economical to restrict logging to already-roaded areas, until and unless future demand justifies the roading of new areas. Also, the final RMP should clarify why 1.8 MMBF is deemed adequate to meet local timber demand on p. 171, while only .7 MMBF is apparently considered adequate for the same demand on p. 73.	125	24. The soil impacts from harvesting woodland would be greater than those from harvesting sawtimber only in the short term (see Table 5-29, DEIS). In the long term, the soil erosion could actually decrease on the woodland sites through management. The present erosion shown in the table represents erosion from natural causes. The discrepancy about harvest levels meeting local demands was noted in Appendix L (FEIS). See also responses to comments 13 and 24.
25. Compare these marginal differences in the economic consequences of the two proposed timber harvest levels with their on-the-ground impacts. The PA recommended intensive timber management for 17,905 acres rather than the 7,175 acres recommended in the RPA. Under the PA, more than twice as much acreage will suffer the effects of timbering on soils, water quality, wildlife species diversity and habitat, visual resources, critical elk calving grounds, and non-motorized recreational values.	125	25. The differences between the two alternatives are not that marginal. As evidenced in the DEIS on pages 126 and 174, the Preferred Alternative (and the Proposed Plan, FEIS) would generate nearly twice as many receipts ($81,000 to $45,000) of generated economic activity ($890,000 to $460,000), personal income ($337,000 to $174,000), and employment (31 to 16 man-years) as the Resource Protection Alternative, Harvest Level 1 (DEIS). See also response to comment 10.
Recreation Resource Management 1. Recreation areas should be managed with an open mind to the multiple-use concept of public lands. Mineral development and other uses can co-exist under certain conditions. Frequently the reclamation of a natural resource development enhances the area for recreation or for wildlife habitat. Blanket exclusions are wrong.	44	1. Multiple use, as defined in the *Federal Land Policy and Management Act of 1976* (Section 102(c)), includes "the relative values for less than all of the resources" and consideration of "the relative values of the resources and not necessarily to the combination of uses that will give the greatest economic return or the greatest unit output." Therefore, the restrictions on mineral exploration are not inconsistent with the multiple use concept. While it is true that mineral development and other uses can co-exist under certain conditions, this was not considered to be the case in the areas proposed for closure to mineral location, mineral leasing, and mineral sales. The restrictions on oil and gas surface facilities would allow some exploration and development but would protect the areas from the impacts of such activities. Since these restrictions and closures were proposed on a site-specific basis under the Proposed Plan (FEIS), Chapter 3, Minerals section, to protect particular resource values, they cannot be considered "blanket" exclusions.
2. Are the cooperative agreements to be developed to include cost-sharing, and if so do the different agencies involved support the additional financial strain to be added to their budgets?	44	2. The details of the proposed cooperative agreements have not yet been developed but could include cost-sharing. The agencies involved have received copies of the DEIS for review and could comment on their support or disagreement with the proposals. In addition, because the agencies would be involved in the preparation and approval of any cooperative agreements, they would be aware of the effects on their budgets.

Table 7-3. Comments and Responses—Continued

Comment	Raised By (index number)	Response
3. No matter how obsequious or commendable the recreation opportunity spectrum settings are, they should be confined to public lands. The BLM has no rights over private land unless specifically retained when the land originally obtained private status from the public body.	44	3. All lands in the resource area were inventoried to determine the overall supply of the various recreation opportunity spectrum (ROS) settings. This information was needed to determine the supply (including scarcity) and demand for settings on public land. This inventory did not and will not affect the rights of private landowners. Management under ROS concepts would be confined to public land.
4. I certainly question the rightousness or justification of encouraging a proposed trailhead, and it's obvious impacts of snowmobiles and all the support facilities they require, upon private land. What is the BLM's reasoning in this regard? Essentially no such facilities are proposed for the upper Colorado River area. Some locations near Crater (with its year round mining activity and accompanying traffic and noise) seem to lend themselves to this type of use. In addition, you help provide some recreational opportunities to this end of the resource area.	44	4. Snowmobile trailheads were proposed in areas where snowmobilers and/or the Colorado Division of Parks and Recreation identified a need for such facilities. The trailhead facilities would be located on public land, but some might require easement acquisitions from private landowners for access. This recommendation has not been changed in the FEIS. The area near Dotsero Crater is not suitable for snowmobile trailhead development because of lack of snow.
5. Deep Creek—The Deep Creek recreation area does not make any sense. The national forest is open, and the only access to approximately 14 square miles of BLM is by two-wheel vehicle through this area. As you should know, the ridge north of Deep Creek is BLM.	68	5. The off-road vehicle (ORV) closure would affect only the canyon from rim to rim. The Onion Ridge area would remain open to ORV use, and an access road has been identified for BLM maintenance under the Proposed Plan (see Map 3-37, FEIS).
6. Map 3-20 apparently indicates that BLM would like to see a substantial acreage shift from the semi-primitive motorized to the roaded-natural class. It seems implausible to us that even the segment of the recreating public that enjoys jeeping would find such a trend acceptable. We wonder how such a trend is compatible with resource protection and with a reasonable road maintenance budget.	76	6. A change from the semi-primitive motorized setting to the roaded natural setting could occur as a result of changes in the physical, social, or managerial settings in an area. Such changes would not necessarily affect jeeping opportunities. Also, they would not require the construction or maintenance of roads. Management actions consistent with the Resource Protection Alternative (DEIS) could cause a change in ROS classes. For example, a vegetation manipulation to increase or improve wildlife habitat is consistent with the objective but could cause a change from the semi-primitive motorized class to the roaded natural class.
7. Allowing primitive non-motorized recreation in Castle Peak for the same area that is planned for timbering in the PA is not consistent—people do not recreate in clearcuts.	76	7. Timber management was not considered inconsistent with recreation under the Preferred Alternative. The area would be managed to provide opportunities for both non-motorized and motorized recreational activities. Although small clearcuts could be the harvesting method for particular sites, the generally preferred harvesting method (for Castle Peak) would be partial cutting. Under both the Preferred Alternative (DEIS) and Proposed Plan (FEIS), the existing semi-primitive nonmotorized ROS setting would be changed to the semi-primitive motorized setting. Timber management is not considered to be inconsistent with management under the semi-primitive motorized setting.

8. Map 3-37 lists the Castle Peak WSA as administratively set aside in the PA for "primitive non-motorized recreational opportunities" yet the green color says that ORVs are allowed. These are not compatible uses. ORVs should be excluded from this area. On the other hand, if the BLM is proposing motorized use, why does the jeep road presently on the eastern boundary of the WSA that appears on Map 3-38 not appear on Map 3-41?	76	8. Map 3-37 (DEIS) also shows the Castle Peak area as providing primitive motorized recreational opportunities. ORV use in the area would be limited to designated roads and trails which would provide for both motorized and non-motorized recreational opportunities. The road on the eastern boundary of the WSA does not appear on Map 3-41 (DEIS) because the portion of the road north of Blue Lake was not proposed for BLM maintenance under the Preferred Alternative (DEIS).
9. The extra roads around, and access to, Bull Gulch that appear on Map 3-41 (compare to Map 3-38) and the proposed ORV access to the southern section of the Bull Gulch WSA does not jibe with the present wild and natural qualities of this area. In addition, it is not understandable why BLM proposes in the PA to designate this area as Visual Class II (Map 3-31), whereas in the EDA (Map 3-30), this area is Class I. This casts serious doubt on the alleged virtues of purely administrative protections of primitive recreation areas.	76	9. The roads on Map 3-41 (DEIS) currently exist but were proposed for BLM maintenance or acquisition of easements. These actions would not affect the natural qualities of the Bull Gulch Wilderness Study Area (WSA) and would expand the recreational opportunities by opening to use the public land that is currently inaccessible to the public. Under the Proposed Plan (FEIS), the proposed area of critical environmental concern (ACEC) in Bull Gulch would be managed as visual resource management Class I (see Map 3-13, FEIS).
10. The proposed snowmobile parking area on the Prince Creek Road is over 1½ miles beyond the farthest point of winter maintenance on that road. While we have no objection to the establishment of a snowmobile parking facility in this area, we do not have any plans to increase winter maintenance levels, and the BLM may wish to reconsider this location with this in mind.	84	10. The proposed snowmobile parking area is located at the first available point on public land. Any location closer to Highway 133 would be on private land and would require an easement for the development of the parking area. The recommendation has been retained in the FEIS, but the specific site location would be coordinated with the county and U. S. Forest Service.
11. We also believe that the reclassification of 2,698 acres in Thompson Creek from semi-primitive non-motorized to semi-primitive motorized is similarly incompatible with NEA management. The area affected by this reclassification is not adequately shown on Map 3-22 and must be clarified in the Final Environmental Statement. In any case, we do not believe that "environmental education opportunities that are more consistent with management objectives for the semi-primitive motorized class" (p. 171) are a worthwhile objective or justification for this reclassification.	84	11. The semi-primitive non-motorized ROS class in Thompson Creek has been retained under the Proposed Plan (see Map 3-9, FEIS).
12. While we support the designation of a Thompson Creek Natural Environment Area, we do not think that the management of this area as described in the Draft is sufficiently restrictive. We do not, for instance, support the establishment of a snowmobile parking area at the edge of the area. We think that snowmobile use within the area is totally incompatible with its management as a Natural Environment Area and that establishment of a snowmobile parking area would unnecessarily encourage such use.	84	12. The snowmobile trailhead in Jerome Park is not inconsistent with the proposed Thompson Creek Natural Environment Area (NEA). The trailhead is located outside the NEA and is intended for snowmobile use that would occur mainly on the national forest. In addition, the NEA, except for the access road, is closed to all ORV use, including snowmobiles, under the Proposed Plan (FEIS).
13. Finally, we would request that the Thompson Creek Area be withdrawn from all mineral location, sales, or leasing instead of the partial withdrawal recommended in the Draft. Any mineral development in Thompson Creek would destroy its value as an NEA, and we do not believe that such a withdrawal would have any significant effect on the value of local mineral resources.	84	13. The entire Thompson Creek NEA is proposed to be withdrawn from mineral location and closed to mineral sales. Also, 960 acres would be closed to mineral leasing. The remaining 3,326 acres of the NEA would be closed to oil and gas surface facilities which would allow leasing but would prohibit the placement of equipment within the NEA. Thus, any equipment would have to be located outside the boundaries of the NEA, which would protect its resource values.

Table 7-3. Comments and Responses—Continued

Comment	Raised By (index number)	Response
14. Recreation Management—There should be more river access sites designated on the Roaring Fork and Crystal Rivers. None of the alternatives show any access sites in the vicinity of Carbondale. Much of the property along the rivers is private with no public access. Access to the rivers for boating, fishing and enjoyment is important on both rivers and will become more important as the area continues to develop.	112	14. Access to both rivers was identified as an issue prior to the development of the alternatives, but, as the comment states, most of the riverfront property is private land. Other than the river access site at Snowmass Junction proposed in the FEIS, no suitable sites exist on public land.
15. Minerals Management—Support for the Preferred Alternative to include additional lands restricted from mineral leasing in the North Thompson Creek area.	112	15. This recommendation was not changed under the Proposed Plan (FEIS).
16. Yet p. 75 states that public land users prefer essentially the kind of "primitive and unconfined recreation" that the Wilderness Act speaks of.	76	16. Primitive and semi-primitive non-motorized ROS classes and "primitive and unconfined recreation" defined in the Wilderness Act are not necessarily synonymous. For example, the Bull Gulch WSA provides outstanding opportunities for primitive and unconfined recreation, but almost half of the WSA is within the semi-primitive motorized and roaded natural ROS settings.
17. We do not agree with the contention that a reduction of 55 percent in semi-primitive non-motorized acreage will have low adverse impacts. Such a reduction will represent an irretrievable loss of recreational resources, it will increase use pressure on adjacent National Forest lands, and it will increase management problems associated with motorized recreation such as noise, dust, litter, and unauthorized off-road travel.	84, 109	17. Recreation assumptions 3, 4, and 5 in Chapter 5, Environmental Consequences (DEIS and FEIS) explain why the impacts are minimal. In addition, Table 4-12 (FEIS), Chapter 4, Affected Environment, Recreation Resources section, shows a large regional supply of this setting is available. Changes in settings do not necessarily represent an irretrievable loss of recreational resources nor an increase in management problems associated with motorized recreation. For example, the semi-primitive non-motorized ROS zone in Thompson Creek was changed to semi-primitive motorized in the Preferred Alternative to accommodate the large group sizes associated with environmental education opportunities. However, other management actions such as the restrictions on mineral exploration and ORV closure were also recommended to protect the recreational resources. ROS classes toward the urban end of the spectrum have higher social carrying capacities than those classes at the primitive end of the spectrum. Thus, theoretically, changes in classes on public land toward the urban end of the spectrum could accommodate more use and could help reduce use pressure on national forest land.
18. More than 30 times more land is devoted to all motorized recreation classes than to non-motorized, and about 80 percent of the land area in the GSRA is open to ORV use in the PA (p. 31, Table 3-16), which is even worse than under a continuation of present management.	76, 125	18. The comment confuses ROS classes with ORV designations. The names of the ROS classes (i.e., semi-primitive motorized, roaded natural) are only labels and do not necessarily relate to motorized or non-motorized recreation. The ROS classes must be combined with the other proposed management actions, including ORV designations, to come up with the whole management scheme. ORV closures and limitations are proposed in semi-primitive motorized and roaded natural classes for the protection of watershed, wildlife, visual, recreation, and cultural resources.

19. The demand analysis on page 75 of the EIS indicates most users prefer those settings that are most primitive in character. We feel greater emphasis must be placed on the preservation and expansion of primitive and semi-primitive recreation opportunities.	76, 84, 109	19. Page 75 (DEIS) contains an editorial error and should have read "...those settings that are more primitive in character." Overall, inventory information indicates a high preference for those settings that are more primitive in character, but this preference also generally includes the semi-primitive motorized setting. In addition, preferences by various activities including hunting, fishing, and picnicking indicate similar preferences for settings ranging from primitive to roaded natural. Furthermore, the supply and variety of ROS settings on the White River National Forest (see Table 4-12 (FEIS), Chapter 4, Affected Environment, Recreation Resources section) reduce the significance of changes on public land. Generally, the physical environment (remoteness, size, landscape alterations) limits the capability of an area to provide a setting opportunity more toward the primitive end of the spectrum. Thus, it would be difficult, if not impossible, to change an existing setting to a more primitive setting (for example, a roaded natural setting to a primitive setting).
20. The Glenwood Springs Resource Area contains several potential National Natural Landmarks. They are as follows: Eagle County Colorado River (State Bridge to Dotsero) Deep Creek Dotsero Lava Flow and Volcano Eagle River Evaporites Garfield County Glenwood Canyon Glenwood Hot Springs-Private Grand Hogback-Potential Rifle Creek Box Canyon Project planning and implementation of a selected alternative should consider these potential designations and avoid impacts which would adversely affect the ecological and geological features of these areas.	93	20. Areas such as those listed were considered under the BLM Natural History Program. None of these areas was felt to qualify for National Landmark designation. These areas were either on private land, covered by other types of designations such as ACECs or special recreation management areas or were affected by valid existing rights. The upper Colorado River was indentified as a special recreation management area and Deep Creek was designated as an ACEC and a recreation management area in the FEIS. Dotsero Crater is partially on private land and is being mined for scoria under valid existing rights. The Eagle River Evaporites are located on private land. Glenwood Canyon is mostly U. S. Forest Service administered. The Glenwood Hotsprings is privately owned. The Grand Hogback was identified as suitable for further consideration for coal leasing (FEIS) and Rifle Creek Box Canyon is state and private land.
21. We recommend that you include both the Dotsero Crater and the Eagle Valley Evaporite Formation in your Resource Management Plan as proposed Research Natural Areas or as proposed Areas of Critical Environmental Concern. We would like to work further with your staff to determine the potential of Dotsero Crater and Eagle Valley Evaporite Formation as natural areas for the registry.	6	21. We have identified in Chapter 4, Affected Environment (FEIS), both of these areas as proposed by the state of Colorado for natural area consideration. As no final determination has been made on these areas as yet, no recommendations have been made in the Proposed Plan (FEIS). If a Decision is made later to designate these areas as research natural areas or ACECs, the final resource management plan will be amended.
Social and Economic Conditions		
1. 1980 Garfield County Population figure should be 22,464, not 13,320.	44	1. The 1980 Garfield County population has been listed correctly in the FEIS (see Table 4-16).

Table 7-3. Comments and Responses—Continued

Comment	Raised By (index number)	Response
2. The introduction statement calls for disclosure of economic consequences. Economics is concerned with the production, distribution and consumption of wealth. Wealth, in this document, should be concerned with the value, as measurable in price (unless there is a better measuring device), of the study area's natural resources and infrastructure, especially as it effects the area's human resources. Nowhere in the document have I been able to locate these economic analyses.	44	2. The DEIS contains an analysis of the significant and measurable economic consequences of each alternative. In particular, the income and employment effects of livestock grazing, terrestrial habitat, and forest management recommendations are evaluated (see pp. 101, 124, 149, and 173 of the DEIS).
3. Wilderness also brings a very good economic benefit to Colorado because people who go to these areas spend a lot of money. They have to buy gas to get there, eat in a restaurant afterwards, buy packpack and camping equipment, hunting equipment, hunting license. And this is a very nonconsumptive and clean industry for Colorado, and it's also renewable and much more stable than the boom-and-bust cycles of timber, minerals, and things like that.	67	3. The substantial contribution of recreational activities, including wilderness recreation, to the local economy was recognized in the DEIS. However, it was determined that wilderness designation would have little effect on the level of recreational use in the resource area. Moreover, it can be argued that the area's economy is overly dependent on recreation-related industry and is vulnerable to the seasonal and business cycles of those industries.
4. However, like many other impacts that would clearly affect the social well-being, quality of life, and possibly even the economic well-being of the area, the adverse impacts from the transportation plan in the EDA and PA are not considered in the brief section on social and economic impacts.	124	4. The transportation plan in the Economic Development and Preferred Alternatives (DEIS) calls for increasing access to various parcels both for recreation purposes and to improve management capabilities of other resources. As the DEIS notes, greater access would create impacts such as vandalism, littering, and off-road vehicle damage. However, the DEIS also notes that providing greater access is in response to public demands and BLM land management needs and would result in better road conditions and spread out use patterns. Therefore, the positive social impacts resulting from the transportation management plans would far outweigh the above-mentioned negative impacts. In any case, the overall impact on the social environment due to this action would be negligible; thus, the conclusion stated in the DEIS that no significant affects on the social well-being or quality of life would be expected is accurate.
5. However, all the alternatives in the DEIS contain little or no analysis of how impacts on the physical resources of the area will affect the "social well-being and quality of life". Discussion of socio-economic impacts is limited almost entirely to impacts on local ranching operations which constitute an extremely small portion of the population and economy, and the DEIS briefly concludes that "social well-being and quality of life are unlikely to be significantly effected" under the EDA and the PA (p. 175), while "social well-being and quality of life would most likely be affected (adversely or beneficially?) under the livestock grazing management proposals" in the RPA (p. 127). These brief conclusions are entirely unsupported in the DEIS and are directly contradicted by statements elsewhere in the document which indicate that all the proposed RMP's would have significant, usually negative, socio-economic impacts.	124	5. In addition to impacts on local ranching operations, the DEIS analyzed the impact on the local economy of changes in wildlife habitat and forest management—those activities most likely to have a significant impact on communities or individuals (see DEIS, pp. 101, 124, 149, and 173). Evaluation of resource management recommendations indicated that by and large their social and economic impacts were too small to measure. Impacts on social well-being and quality of life were cited when there was a possibility that they could be significant, as with individual ranchers who would face large changes in livestock forage allocation. A social setting has been added to the FEIS (see Chapter 4, Affected Environment, Social and Economic Conditions, and Chapter 5, Impacts on Social and Economic Conditions).

6. It seems reasonable under NEPA to request a comprehensive economic analysis of any commodity sales by BLM. At a minimum this would include mineral sales (sand, gravel, fill, etc.), firewood sales and land sales. All may have a significant impact on local economies.	124	6. Because BLM has no control over the timing of mineral sales, it is not really possible to predict sales levels. The economic impacts of such sales are thus difficult to evaluate. However, the economic effects of selling fuelwood, timber, and land were evaluated in the DEIS (see pp. 101, 124, 149, and 173, DEIS).
7. The proposed EDA subordinates wildlife, which supports a major segment of the area's economy with wildlife based recreation, to livestock production, which represents a "small and declining part of the economy" (p. 76). In effect, the EDA inverts the appropriate priorities for these two competing uses of forage based on their relative contributions to the area's economy. As a result, the proposed EDA would actually result in a slight economic loss to the area, while the RPA would, ironically, yield the greatest positive economic impact (Table 3-28).	124	7. When the Economic Development Alternative (DEIS) was developed, it was thought that the wildlife forage recommendations would result in a negative economic impact. However, analysis of the alternatives revealed that the wildlife forage allocation changes would have a greater economic impact than the livestock forage allocation changes. This realization was taken into account in the development of the Proposed Plan (FEIS).
8. A cost/benefit analysis should be done for each specific element of each alternative if any reasonable or idealable decision is to be made.	13, 44, 124	8. Because of the level of detail of the recommendations in the DEIS, it was not possible to generate costs for the specific elements in each alternative. Further planning to determine specific engineering-type recommendations will be required to estimate costs. Such a wide range of costs could be estimated based on possible current recommendations that a comparison between alternatives would have little value.
Cultural Resource Management		
We must take issue with the unsubstantiated statement on page 46 that the general public does not consider management of cultural resources to be a major issue. If this is BLM's perception, that might explain the failure to include the nomination of the Blue Hill Archaeological District to the National Register of Historic Places under the Continuation of Current Management Alternative. It might also explain why the Colorado State Historic Preservation Officer (SHPO) does not appear on the distribution list for this document on page iv. In any case, if BLM is willing to speak for the general public about cultural resources, a statement such as this one should be supplemented by evidence. If no such evidence is available, the statement should be deleted from the final environmental statement.	93	Cultural Resources were not brought up as major issues at scoping meetings or subsequent workshops. However, BLM made cultural resources a management concern recognizing their importance. The SHPO received a copy of the DEIS through the Colorado Division of Planning-State Clearinghouse, which distributes to state agencies. However, we have added the SHPO to the distribution list in the FEIS. Under the Continuation of Current Management Alternative (DEIS), the nomination of the Blue Hill Archaeological District to the National Register of Historic Places was not included to provide a baseline to analyze the impacts.
Wilderness Management—General		
1. As wilderness these unique areas can be more permanently preserved and protected from the threat of reduced forests and wildlife populations.	8, 59, 60, 58, 80, 115, 48, 127, 91, 98, 65, 56	1. Wilderness designation can be considered to be more permanent than administrative protections because any change would require another act of Congress. Wilderness designation would preclude timber harvesting and also protect wildlife habitat. However, wilderness designation could also prevent some actions that would enhance wildlife habitat and thus enhance the wildlife populations.
2. So, obviously, I feel from a recreation—and not only recreation, but also from a study point of view and the fact that the land use point of view, that Hack Lake, Bull Gulch, and Castle Peak all deserve their wilderness designation because they are important to this area's predominately recreation orientation.	14	2. At this time, hunting is the predominant recreation activity occurring in these three areas. Hunting can continue either with or without wilderness designation. In addition, the management under the Proposed Plan (FEIS) for all three areas would provide opportunities for non-motorized recreation.

Table 7-3. Comments and Responses—Continued

Comment	Raised By (index number)	Response
3. There seems to be alternatives that could be used for the resource possibilities of the land that the one gentleman was talking about, that there are needs for the resources of these lands to be used, and I think that we could find alternatives to coming up with these resources without having to take them from these lands.	16	3. Alternative sources of timber, minerals, etc., do exist outside of the wilderness study areas (WSAs). However, the BLM's Wilderness Study Policy requires a site-specific analysis of each WSA in determining the impacts of wilderness designation on other resources. This site-specific analysis is used to determine the most appropriate use of a particular WSA and its resources. In addition, when valid existing rights exist within a WSA, these resources can be developed and could cause manageability problems. We did analyze the probability of producing resources outside these areas. All areas were identified that were suitable for mineral or timber management. The areas within these WSAs suitable for production are part of that total.
4. In each of the wilderness study area discussions there appear these statements: "A division exists among residents of the resource area on the concept of wilderness. An apparent majority is opposed to wilderness designation. Support for additional wilderness designation tends to come from younger residents, more recent arrivals to the area, and residents in the resort areas." I would like to know from what study these general conclusions came. It may be somewhere in the documents, but I didn't find them.	21, 59, 125	4. This information comes from a study conducted by the BLM's Colorado State office for the Glenwood Springs Resource Management Plan (RMP). Discussions with "categorical leaders and community knowledgeables" were held in 1979 and 1980 to assess the attitudes and values of area residents. The discussions centered on community attitudes toward management and development of resources managed by BLM. A copy of the report is in the resource area files.
5. The discussion also in each wilderness study area relates that comments received in favor of wilderness outnumbered those opposed to wilderness designation. I would like to see a clearer presentation of how much each of these different publics' desires were considered in the recommendations. Again, I didn't find that in there, and it appears somewhat contradictory and just confusing.	21	5. The public comment sections in the technical supplement summarized the comments received to date (date of publication) on the WSAs. As stated in the BLM's Wilderness Study Policy, the BLM wilderness study process will consider comments received from interested and affected publics at all levels—local, state, regional, and national. Wilderness recommendations will not be based exclusively on a vote-counting majority rule system. The BLM will develop its recommendations by considering public comment in conjunction with its analysis of a WSA's multiple resource and social and economic values and uses.
6. The Wilderness Suitability Analysis described the wilderness values of these two areas in almost glowing, rhapsodic terms. With only the smallest qualifications, these two areas, without question, meet the standards described in Criterion No. 1.	21	6. The wilderness characteristics were recognized in the wilderness inventory and resulted in the identification of the areas as WSAs. They would not be WSAs if they did not possess wilderness characteristics. However, other criteria and quality standards were also used to make the recommendations (see Appendix 1 in the wilderness technical supplement).

7. The objective statement should include language to indicate possible coincidental use with mineral and other development investigations if practical. Management actions should positively consider the multiple use recommendations of Congress. The *Minerals Policy Act of 1970* should be cited. No additional wilderness study areas or wilderness areas should be designated until complete policy and economic costs are established. Existing regulations and constraints are more than enough to protect other fragile and unique resources.	44	7. Only the study phase of the wilderness review process is conducted in the RMP and EIS process. The objective of the study phase is to determine and make recommendations on the suitability or nonsuitability of WSAs for wilderness designation through the multiple use planning process and public involvement. This analysis includes social and economic effects. It is inappropriate to include language in the objective statement about other coincidental uses since that is a management, rather than a study, concern. However, the analysis includes the beneficial and adverse impacts of designation on other resources. If designated as wilderness by Congress, each WSA would be managed according to the *Wilderness Act of 1964* and the BLM's Wilderness Management Policy that provide guidance on activities that are permissible within a wilderness.
8. BLM has totally ignored the requirements of Component No. 2 of Criterion No. 1 of the Wilderness Study Policy, which states that special features of the area be "thoroughly studied." Cultural resources rate one line analyses throughout the Technical Supplement. There is no evidence of Class I or Class II Cultural Resource Inventories, as are required by the Wilderness Study Policy's requirement of thorough consideration.	59	8. The BLM's Wilderness Study Policy does not cite Class I or Class II Cultural Resource Inventories as a requirement. Cultural resources were discussed using existing available information.
9. Use occurs on these lands at different times than on the rock and ice wilderness and creates an opportunity for people who can't get into the wilderness or the Maroon Bells or the Flat Tops in the fall and spring and winter to have places to go during those periods of time.	63	9. The use season for Eagle Mountain, Hack Lake, and Castle Peak would be essentially the same as local existing wildernesses. Because it contains lower elevations, Bull Gulch would provide hiking opportunities earlier and later in the year than existing local wildernesses.
10. FLPMA asked the BLM to take a look under Section 603 at what areas of their land could qualify as wilderness and where other conflicts didn't exist, that those areas should, in fact, be wilderness. FLPMA didn't say that when wilderness qualities exist in a wilderness study area and no conflicts exist that administrative protection was an alternative.	62	10. Section 603(a) of the *Federal Land Management and Policy Act of 1976* (FLPMA) only mandated the wilderness review process and that recommendations as to the suitability or nonsuitability of areas be reported to the President and to Congress. The BLM's Wilderness Study Policy requires the consideration of factors other than resource conflicts in determining suitability (see Appendix 1 of the technical supplement). Areas recommended as nonsuitable for wilderness designation may possess resource values that justify administrative protection.
11. There's a scarcity of wilderness, and it's only to be found here. Just because a board foot of timber can be sold for a certain amount of money doesn't mean that that's a resource cost of wilderness designation. If it can't be produced elsewhere, then it's a resource cost. There is a lot of timber outside of those areas in Colorado and elsewhere in the country.	63	11. Because additional areas with wilderness characteristics cannot be created and that long-term demand is expected to exceed supply, wilderness is scarce. However, although the WSAs are the only areas on public land in the resource area identified as possessing wilderness characteristics, numerous other BLM, National Park Service, and U. S. Forest Service areas elsewhere have the potential to be designated. The prohibition of timber harvesting or other extraction or development of resources is a resource cost of wilderness designation since it would represent foregone opportunity. However, the significance of this cost may be reduced if there are alternate sources.
12. I suspect, because I've compared the lists of pre-FLPMA leases that have expired this year, that BLM is overestimating the amount of acreage in pre-FLPMA leases in these wilderness study areas.	63, 9, 62	12. It is true that some pre-FLPMA leases have expired. The acreage of current pre-FLPMA leases is approximately 1,220 acres in the Castle Peak WSA and 7,830 acres in the Bull Gulch WSA. This information was considered in making the recommendations under the Proposed Plan (FEIS) and will be included in the final wilderness EIS.

Table 7-3. Comments and Responses—Continued

Comment	Raised By (index number)	Response
13. I worked on the wilderness inventory stage of the Colorado Wilderness Review for BLM, that is, I worked for the Colorado Open Space Council, not for BLM that mentioned these areas or supported the positions of organizations that were recommending these areas. It seems to me it's in the hundreths or thousandths, not ten.	63	13. The number of comments received on each WSA during the intensive wilderness inventory was documented in the *Final Wilderness Study Area* book published in November 1980. For all the WSAs, the number of comments cited in that document is the same as cited in the technical supplement.
14. We have always viewed the BLM inventory process as a very important opportunity to identify some lands in the state which are unique in ways that are different from the presently established parks and wilderness areas. Most of them are lower mid-elevation. They're relatively little known by the public, by the outdoor-loving public, except, perhaps, for the people who go hunting. They have a different geology and ecology than what we're accustomed to in our alpine wildernesses; and in ways in which the other areas are not wild, these areas are wild.	64, 115	14. The Baily-Kuchler system identifies the Hack Lake, Eagle Mountain, and Castle Peak WSAs as the same ecological characterization as the "alpine" wildernesses locally and state-wide. Only the Bull Gulch WSA was identified as having a different ecological characterization than existing alpine wildernesses.
15. And one of the ways in which they are wild is that they are very little traveled, they have very few trails, you have to bushwack around. It's a very interesting exercise in orientating to get your way from one place to the other. In most other established wilderness areas, this is not so. They are quite tame by comparison. They have trails and signs and so forth.	64	15. This is true of Bull Gulch and Eagle Mountain, but Castle Peak and Hack Lake both have established trails within them.
16. Of course, when we come to the recommendations, this is another thing altogether. Unfortunately, the recommendations do not follow from the study and are not justified, and I think this is rather a grievous failing of the documents.	64, 125	16. The recommendations and rationale in the DEIS are based upon the application of the planning criteria and quality standards in BLM's Wilderness Study Policy that are documented in the DEIS and the technical supplement. The recommendations under the Proposed Plan (FEIS) also consider the information and opinions in the comments received during the formal public comment period on the DEIS.
17. One argument against the designating of some of these areas is that administrative procedures will protect the area. Well, as other people have mentioned, those are pretty temporary. Sure, they may protect it for five years, ten years, or longer, but then with a change in administration in the present administration or a change in management, that can change very fast and it can be opened up. Giving these areas wilderness protection will protect them, and it will be much harder to change them. It would take another act of Congress.	67, 59, 60, 58, 50, 115, 48, 127, 91, 21, 14, 98, 61, 65, 56, 37, 79	17. Wilderness designation can be considered to be more permanent than administrative protections because any change would require an act of Congress. Administrative protections could be changed but would require a new plan or plan amendment with an associated environmental assessment and public involvement. Recommendations on suitability were based on application of the criteria and quality standards in the BLM's Wilderness Study Policy. For study areas recommended nonsuitable, it is considered appropriate to protect certain values with the proposed administrative actions.
18. But what I'm concerned about is that I don't think that the BLM has followed its direction under Section 202 of the *Federal Land Policy and Management Act* and, particularly, Subsection C and Subsubsections 6 and 7 require the BLM—I can give you the cites: it's Title 43 U.S.C., Section 1712, Part C, Subsection 6—to consider the relative scarcity of values involved and the availability of alternative means and sites for realization of those values; and Subsection 7 requires the BLM to weigh the long-term benefits to the public against the short-term benefits.	69, 125	18. The supply and demand and relative scarcity of resources was included in the Management Situation Analysis (available for review in the Glenwood Springs Resource Area office) that is part of the supporting documentation the EIS. Not all of the supporting information could be included in the DEIS and FEIS because of page limitations.

19. And yet, in spite of this, the Preferred Alternative did not recommend any wilderness designation, and I'm concerned, again, that the BLM is not following its mandate under Section 603 of the *Federal Land Policy and Management Act* to designate or to provide a recommendation to Congress.	69	19. The Preferred Alternative (DEIS) did recommend 340 acres and the Proposed Plan (FEIS) recommends 10,118 acres as suitable for wilderness designation. This is within the mandate of Section 603 of FLPMA since the only thing the BLM, the Secretary of the Interior, or the President can do is make recommendations. All suitable and nonsuitable recommendations for WSAs studied under Section 603 will be submitted to Congress. Only Congress has the authority to designate an area as wilderness.
20. Therefore, I believe that some more studying is needed to determine whether the wilderness value or the development values are more scarce in Colorado. And then, finally, after determining that, to make a balancing between the two.	69	20. Such a determination would require all areas with wilderness potential and all lands with development values in the state, and thus all lands in the state to be studied simultaneously. Congress can essentially do this, if it desires, by waiting to act on any areas until all of the studies have been completed.
21. And I'm concerned that the DEIS seems to just pick up on the Economic Development Alternative, which recommends no wilderness, and ignores the Resource Protection Alternative, which in this case recommended all wilderness designation, rather than engage in a balancing of the actual values that are there.	69, 47, 53	21. The Economic Development Alternative in the DEIS recommended 10,755 acres as suitable for wilderness designation. Except for the deletion of split-estate acreage in the Bull Gulch WSA identified in Chapter 4, Affected Environment, the recommendations under the Proposed Plan are the same. The two planning criteria and six quality standards in the BLM's Wilderness Study Policy include the evaluation of wilderness values, the impacts of wilderness designation on other resources, and the impacts of nondesignation on wilderness values to determine the most appropriate use of a WSA and its resources. Depending on the analysis, this may or may not be a "balanced situation" for wilderness or other resource values.
22. Some of these WSA's may or may not have timber value. We urge the careful study of their dollars and cents potential, soil erosion hazards, and the alternative values of recreational diversity.	72	22. Each of these concerns has been addressed and is documented in the DEIS and the technical supplement.
23. Non-motorized, and especially wilderness recreation is cheaper to manage and has fewer environmental impacts than motorized types. Roads do not have to be maintained, access needs are minimal, and even trails are unnecessary. In fact, the less the wilderness is tamed by all these amenities, the more like real wilderness it becomes. Among the many charms of the Castle Peak and Bull Gulch WSAs are the difficulty of access, which requires more perseverance and imagination on the part of the hiker, and the lack of trails, which exercises orienteering skills. These areas are like the "mountains without handrails" that approach our ideals of what wilderness should be like. And of course, foot traffic is much less likely to cause the soil damage and erosion problems inherent in RV and ORV recreation.	76, 56, 51	23. Management of wilderness recreation is not necessarily cheaper than management of other types of recreation, including motorized recreation. It may be more expensive depending on amounts of use, the capability of the area to accommodate that use, and the fact that the area may have to be protected from overuse that would degrade the values and experiences that attract the use in the first place. Although the impacts of non-motorized recreation could be fewer and lesser in degree than motorized recreation, the threshhold of acceptable impact could also be lower.
24. The assumption on p. 86 that additional wilderness use in BLM wilderness would only be "displacement" use ignores the fact the increasing use has strained present wilderness areas to the saturation point and has thus reduced the wilderness experience for those users. Therefore, BLM wilderness in what now has become the Rifle-Vail-Aspen "recreation corridor" would serve to accommodate "overflow" not "displacement" use.	76, 55	24. The U.S. Forest Service estimates the carrying capacity of seven wildernesses on the White River National Forest will not be reached until about the year 2000 (Draft Environmental Impact Statement for the White River National Forest Land and Resource Management Plan). In the context of the comment, "overflow" is synonymous with "displacement" as used in the DEIS since both terms refer to a shift in the location of use.

Table 7-3. Comments and Responses—Continued

Comment	Raised By (index number)	Response
25. The statement is often made in this and other BLM documents that a WSA is not a "unique wilderness resource". This is too parochial a view. What may not, in fact, be a stunningly unique area by Colorado standards (e.g. Castle Peak WSA) is unique enough, considering the country as a whole, and will seem marvelous indeed to the visitor from the Flatlands. BLM manages lands belonging to and whose management is paid for by the whole U. S. public, not just the Colorado public or the local economic interests. Hundreds of thousands of this general public visit Colorado each year to view its natural and mostly public wonders.	76	25. The term "unique" refers to something that is one and only, sole, without like or equal, unusual, or rare. Therefore, if an area is not unique by Colorado standards, it would similarly not be unique by national standards. Even through an area may not be unique, it may possess high quality resource values. The resource values of each WSA are identified in the DEIS, technical supplement, and FEIS.
26. The National Park Service supports establishment of wilderness generally as enhancing the overall setting for recreational use and aesthetic quality. From the figures in Table 3-18, it appears that wilderness characteristics will be preserved only when they do not conflict with the alternative in question. We suggest that the final EIS contain a more detailed clarification on BLM's policy regarding wilderness selection.	93	26. The BLM's policy on wilderness studies and recommendations is contained in the BLM's Wilderness Study Policy published in the *Federal Register* February 3, 1982, and is summarized in Appendix 1 in the technical supplement. In formulating the alternatives, recommendations for all resources, including wilderness, were made with regard to overall emphasis of each alternative.
27. We favor only a moderate increase in wilderness areas in Colorado. The State Engineer's Office has the responsibility to administer water rights within Colorado. Our main concern regarding the designation of any area as a wilderness area is maintaining motorized access to future and existing reservoirs and irrigation ditch headgates. The motorized access is needed to these projects not only for maintenance purposes, but also for our Water Commissioners to maintain diversion records and our Dam Inspectors to evaluate the safety of dams. If water rights are not affected, then we do not have any problems.	109	27. As far as is known, existing water rights would not be affected in the areas recommended as suitable for wilderness designation under the Proposed Plan (FEIS).
28. Regarding the assumptions made to analyze the environmental consequences of the wilderness recommendations, we feel that application of the economic values of wilderness mentioned in the 1981 Colorado State University study by Walsh, Gillman and Loomis would be appropriate to wilderness study areas in this resource area. We also agree with this study that nondesignation of any wilderness study area will result in devaluation of that area both to those who use it and to those who may never visit the site. The non-market values of preservation, primitive recreation, opportunity for solitude and nature study, wildlife observation and appreciation of scenic, natural beauty are valid and must be considered equally with market values such as grazing, timbering and mining.	115, 125, 109, 117	28. The BLM's Wilderness Study Policy requires the determination of beneficial or adverse social or economic impacts of wilderness designation on local areas. The social and economic impacts identified in the study satisfy this requirement. Nondesignation cannot be considered to cause an across-the-board devaluation of an area, nor does the Walsh study attempt to make that claim. Depending on the preferences of individuals, either nondesignation or designation could cause enhancement or devaluation of an area.

29. Designation of Bull Gulch and Castle Peak as wilderness could be beneficial in mitigating the population and visitor growth created by ski area expansions in Eagle County. The DEIS fails to assess future demands for wilderness use by either local or visitor populations. Certainly, neither the BLM nor the U. S. Forest Service could pretend to assess visitor use or trends independent of each other.	117	29. Demand projections were included in the supporting documentation for the DEIS. These projections estimate the carrying capacity of existing wildernesses in the state will be reached between the years 2000 and 2010. The U. S. Forest Service estimates the carrying capacity on seven wildernesses on the White River National Forest will be reached about the year 2000 (Draft Environmental Impact Statement for the White River National Forest Land and Resource Management Plan). Information on demand projections has been included in the Affected Environment section in the FEIS.
30. We have several concerns about the attitude BLM seems to have about withdrawing and closing lands to mineral entry. 1. These closed lands include a suitable wilderness area (Hack Lake), plus 3,456 acres of adjacent land. We contend that the interim regulations on wilderness management provide for the protection of resource values. We feel it is inappropriate to close these areas. Withdrawals greater than 5,000 acres require congressional approval. We believe that any WSA that is deemed "suitable" by this study process should not automatically be a candidate for withdrawal action as a second layer of "protection." 2. Areas not recommended for wilderness are adequately protected by existing land use regulations and this land use plan without withdrawal. Any action to withdraw "nonsuitable" WSA candidates could be viewed as an attempt to circumvent the entire BLM wilderness study program. 3. Included in these proposed closings are areas of private land. The MEC does not know of any law, regulation or court decision that allows the federal government to close private lands to leasing or sale. Because private lands are not open to mineral location, it is a moot point whether the federal government can close private lands to location.	132	30. BLM's Interim Management Policy provides for the protection of WSAs only until Congress makes its decision. The BLM's Wilderness Study Policy requires the identification of alternative management of a WSA if it is not designated as wilderness by Congress, and restrictions on mineral exploration and development could be an appropriate part of that management. Since Hack Lake will be released from wilderness consideration under under approval of the Proposed Plan (FEIS), it will also be released from protection under the Interim Management Policy. Even though an area may be considered nonsuitable for wilderness designation, it may still possess resource values that justify protection including restrictions on mineral exploration and development. Thus, the protective actions are identified in Table 3-2 (FEIS) are considered appropriate. Under the *Wilderness Act of 1964,* a withdrawal is implemented upon designation as wilderness by Congress. Because of the small scale of the maps, some of the areas proposed for mineral restrictions were shown as large areas that included private land. However, the restrictions apply only to land over which the federal government has control.
31. The 10th Circuit ruling says that leases can be developed only if they contain valid existing rights, and this must be determined on a case-by-case basis. Since Bull Gulch was found unsuitable for wilderness, in major part to provide flexibility for development of its pre-FLPMA leases (p. 67), the BLM will now need to go back and determine whether any of these leases do in fact contain valid existing rights whose development could jeopardize wilderness values. Both the analysis and the rationale will have to be rewritten accordingly.	125, 62	31. According to a Department of the Interior Solicitor's opinion dated 12/10/82 on the 10th Circuit Court of Appeals ruling and current Bureau policy, BLM's interim management policy on pre-FLPMA leases in effect since 1981 has not changed, and the analysis of the effect that pre-FLPMA leases would have on manageability is correct.
32. BLM acknowledges the values of wilderness for multiple uses in its statement on Eagle Mountain WSA that "opportunities would exist to use the WSA...as a benchmark to study changes induced by man and to study unmodified natural processes" (p. 13, Technical Supplement). Why has this same opportunity not been recognized in the case of the even larger, more unique areas of Hack Lake, Bull Gulch, and Castle Peak?	125	32. This value would also exist in the Hack Lake, Bull Gulch, and Castle Peak WSAs if designated as wilderness.

Table 7-3. Comments and Responses—Continued

Comment	Raised By (index number)	Response
33. The failure to recommend any but a token amount of wilderness runs counter to the best interests, both actual and perceived, of the local community. In economic terms, a nonwilderness recommendation for Castle Peak, Bull Gulch, and Hack Lake will lead to a decline in the wildlife, visual, and other wilderness values of these areas. This, in turn, will adversely affect a major portion of the local economy, hunting, and non-motorized recreation.	125	33. Nonwilderness recommendations were not considered to significantly affect wildlife or visual values in these WSAs. Neither were they considered to have a significant effect on the local economy. The losses of wilderness values are documented in the technical supplement, DEIS, and FEIS. Under the Proposed Plan (FEIS), 9,778 acres in the Bull Gulch WSA were recommended as suitable.
Wilderness Management—Bull Gulch		
1. Bull Gulch WSA (15,000 acres) is designated "NS" (DEIS, page 35) and according to Map 3-18 is projected for marginal use as fuelwood timber, although some slopes are over 40 percent, thus unsuitable for lumbering without erosion. Your Map 3-28 admits Bull Gulch is an area of "critical environmental concern". Map 4-5 points out deer and elk habitat in this WSA. The scenic and recreational value is much higher than the short-term profit derived from firewood.	5	1. Under the Proposed Plan, 9,778 acres are recommended as suitable for wilderness designation. Timber management is recommended in the nonsuitable portion of the WSA but stands on unstable or fragile soils would not be managed. The proposed area of critical environmental concern for visual resources is not within the areas identified for forest management. Harvesting of woodlands within the WSA would result in locally significant increases in big game forage and populations of wildlife species associated with more open stands of pinyon and juniper (see DEIS, p. 166).
2. The rationale on page 67 concludes that without wilderness designation "Conflicts with all other resource values would be eliminated and other resources, such as forestry, could also be managed and developed." The rationale concludes, "This recommendation would also prevent further wilderness manageability problems that would result from potential future mineral exploration." The rationale appears to us to lack internal consistency.	21	2. The quoted rationale for the no wilderness options under the Preferred Alternative (DEIS) is not inconsistent since nondesignation would eliminate the conflicts between other resource values and wilderness designation and because wilderness manageability problems would not exist under a nonwilderness situation. Under the Proposed Plan (FEIS), recommending 9,778 acres of the WSA as suitable would also eliminate conflicts with forestry since timber management could occur in the portion recommended nonsuitable.
3. The rationale section states that nondesignation would not affect diversity available in wilderness nationally but that it would make a difference locally: "...a different landform/ecosystem would be represented in the local wilderness supply, and thus provide different primitive recreation experience opportunities." We could conclude from this that local residents would benefit most from wilderness designation. The analysis continues on to conclude that: "None of the alternatives would have significant, beneficial, or adverse impacts on the local economy."	21	3. The quote in that paragraph (from p. 67 of the technical supplement) goes on to state "the restrictive management in this alternative will maintain these primitive recreation opportunities." The economic effects of each wilderness option under each alternative were analyzed and are documented in the technical supplement. From this analysis, none of the alternatives were considered to have significant economic effects on the overall local economy, although the impacts to some individuals could be significant.
4. The canyon itself was bordered on the north by steep cliffs of the maroon sandstone formation, being a very unique formation found only in this part of the state, with pinyon pine and juniper; while in contrast, the south wall of this canyon was a steeply pitched north-facing slope with a great diversity of vegetation due to the rapid increase in elevation.	25, 70	4. Because the Maroon Formation is fairly extensive locally and outcrops in several locations in the region including Bull Gulch, Red Hill, Red Table Mountain, the Roaring Fork Valley, and the Maroon Bells, it cannot be considered unique.
5. It's especially available for hiking and backpacking when some Forest Service areas are snowbound.	26, 137	5. Because the WSA is lower in elevation than most U. S. Forest Service wildernesses, it does have a longer hiking season.

6. The great amount of people that would begin to enter the area would, if it becomes nonwilderness, cause such an extreme shock to the wildlife that it would begin to diminish.	27	6. Because of the actions proposed under a nonwilderness situation including an off-road vehicle (ORV) closure on 10,415 acres, recreation use was not considered to have an extreme impact on wildlife populations.
7. With all the learning opportunities of Bull Gulch one would only want to study from this area; but if roads, mining, and more people begin to enter, the area will no longer be of great educational value. Knowing that, in my backyard there is, as of now, and hopefully will remain, an untouched, beautiful area to go to, to learn and to prosper from.	27	7. Increased visitation would probably not affect the educational value of the area. The impact of roads and mining would be dependent upon the location and extent of disturbances but may not necessarily destroy the educational value. However, 9,778 acres of the WSA are recommended suitable for wilderness designation under the Proposed Plan (FEIS) and will be closed to ORV use and mineral exploration subject to valid existing rights.
8. In addition, in the BLM's Preferred Alternative, they claim that dividing the land into different management areas, such as recreational zonings and areas of critical environmental concern, is all the protection the area needs.	28, 29	8. Rather than "dividing" the land into different management areas, many of these different management actions under a nonwilderness situation overlap. In addition to the protective actions proposed, these various actions highlight the resources and values which exist and identify the management should Congress not designate the area.
9. In addition, all of Bull Gulch should be recommended for wilderness because the timber resources are too inaccessible to be economical. Also the fuel wood resources are insignificant.	29, 56, 85, 98	9. The timber resources recommended for management in the nonsuitable portion of the Bull Gulch WSA are physically accessible. The fuelwood resources in the WSA represent approximately 14 percent (about one seventh) of the total potential annual allowable harvest level under the Preferred Alternative (DEIS) based only on the acreage suitable for management. Other factors such as accessibility, distance, and benefits to other resources must also be considered. Thus, the fuelwood resources in the WSA could be significant. These timber resources are in the portion of the WSA recommended as nonsuitable under the Proposed Plan (FEIS).
10. Aside from wilderness assets documented in the study, which include water, wildlife, solitude and primitive recreational opportunities, this area in particular is of a unique land form ecological system and would be a significant asset to the wilderness system. It would be a new variation in the wilderness preservation system.	34, 115, 21	10. The Bull Gulch WSA was recognized as being ecologically different than existing wildernesses locally. However, numerous other wilderness study areas in the western United States possess this same ecological characterization. The effects of designation or nondesignation on diversity in the National Wilderness Preservation System on a regional or national level cannot be determined until the studies are completed for these other areas.
11. The Bull Gulch possible wilderness management proposal indicates isolation of some private land holdings along the Colorado River. What protection is given to the rights of these private land owners?	44	11. The Bull Gulch WSA does not contain any private land inholdings and does not affect access to private lands adjacent to its boundaries.
12. Bull Gulch was originally recommended, but in the last minute was turned down on the premise that nothing will happen to it anyway, and to maintain flexibility. It has no conflicts because the timber is not considered "economically significant" (page 63 of the DEIS), and the "only strategic or critical material listed in the Stockpile Report to Congress that potentially exists within the WSA is vanadium, and this is still undiscovered" (page 43 of the same report). The "only saleable minerals known to exist in the WSA are sand and gravel which have also been identified as subeconomic and undiscovered" (also page 43).	56	12. A low economic significance does not mean that a resource conflict does not exist but only that the economic impact would be low. The actual economic value of undiscovered minerals is unknown. Other identified conflicts are the potential for oil and gas and existence of pre-FLPMA leases that could cause potential manageability problems (also identified on p. 4 of the technical supplement). The wilderness recommendations under each alternative in the DEIS and under the Proposed Plan (FEIS) are not final. They are only proposed. Under the Proposed Plan, 9,778 acres are recommended as suitable.

Table 7-3. Comments and Responses—Continued

Comment	Raised By (index number)	Response
13. It is apparent that the BLM recognizes the wilderness charactertistics of this area since it was originally recommended as wilderness, but at the last minute rejected because "nothing will happen to it anyway". Bull Gulch has no other resource conflicts. It is an outstanding area, very deserving of legal, not administrative, protection.	58, 29, 65, 62, 61, 91, 47, 50, 51, 64, 67, 34, 85, 43, 73, 74	13. The wilderness characteristics of the Bull Gulch WSA were recognized during the wilderness inventory and resulted in the identification of the area as a WSA. Resource conflicts have been identified in each alternative including forestry, vegetation manipulations to increase livestock forage, and potential manageability problems from valid existing rights on pre-FLPMA oil and gas leases. The purpose of the study phase is to determine the most appropriate use of a WSA and its resources, either wilderness or management for other resources. The recommendation in each alternative can differ based on the emphasis of that alternative and the multiple use analysis. Under the Proposed Plan (FEIS), 9,778 acres are recommended suitable for wilderness designation, and 4,586 acres are recommended nonsuitable.
14. The inadequately explained rejection of Bull Gulch for wilderness, especially when the analysis so glowingly highlights its qualifications for wilderness, could only come from an unwillingness on the part of the Field Office to relinquish its management perogative on this tiny portion of the Resource Area or from some unwritten policy change coming from Washington.	66	14. The Proposed Plan (FEIS) recommends 9,778 acres as suitable for wilderness designation (see Description of Proposed Plan).
15. I believe the rationale was that management could protect the wilderness values anyway. Well, I don't think that Congress wanted that decision to be made by the BLM. If the area had all of the attributes that are required under the Wilderness Act and had, virtually, no conflicting values, I don't think that the BLM is directed by the Act, by Section 603, to say, well, we think this area can be managed as a wilderness anyway and, therefore, protect the wilderness values and, therefore, we don't recommend that it be designated as a wilderness.	69	15. No decision has been made by BLM, only a recommendation. When Congress receives the President's recommendation and the supporting information required in the Wilderness Study Policy, it will make the decision as to whether or not the WSA will be designated wilderness.
16. And I guess also under the National Environmental Policy Act, for all of the different alternatives under the DEIS, to recommend wilderness on at least two-thirds of the area and then to have a conclusion that says no wilderness, to me, seems inconsistent with the whole purpose of having an environmental impact statement.	69	16. The *National Environmental Policy Act* and the BLM's planning regulations require the evaluation of alternatives that provide a range of choices and the impacts of implementing each alternative. To have distinct alternatives, the management of each resource can be different, and the overall management must be different in each alternative.
17. Local markets for fuelwood are not growing as rapidly as was once anticipated. This should relieve timbering pressure on areas such as Bull Gulch. We question the accuracy of the BLM contention that timbering would not affect the income generated by recreation. We feel that timbering would result in a degradation of the area that would leave it less attractive for recreation, thereby reducing local income.	115	17. Floatboating, fishing, and hunting are the major recreation activities that occur within and near the Bull Gulch WSA. Timber harvesting would have little, if any, effect on these activities, thus would not affect the income produced by these activities.

18. In the face of this overwhelming evidence for a wilderness recommendation, the Bull Gulch rationale appears an unsubstantiated fabrication at best. The rationale in no way follows from the preceding analysis, and contains several telling inconsistencies. It states first that administrative restrictions (ACEC, ORV closures, etc.) will protect the area, making wilderness designation unnecessary, while two sentences later we find that non-wilderness status will elminate conflicts with future minerals and timber development. The contradictions are obvious. If non-wilderness status will allow timber and mineral development, the administrative "protection" measures apparently will not protect the area. Since the area's minerals and timber resources are insignificant (pp. 126 and 146, RMP/DEIS, and elsewhere), why then do we have to keep the area open for this development? BLM is trying to have it both ways, but there is no such thing as part wilderness!	29, 93, 125, 56	18. Under the Proposed Plan (FEIS), 9,778 acres of the Bull Gulch WSA are recommended suitable for wilderness designation and 4,586 acres are recommended nonsuitable. The comment omits part of the rationale for the Preferred Alternative on page 67 of the technical supplement which states the restrictions would protect essentially the same area as the Partial Wilderness Option. The conflict with forestry would be eliminated because the manageable timber and fuelwood is outside the administratively protected area (see p. 60 of the technical supplement). Because of pre-FLPMA leases and valid existing rights associated with them, there is a potential for wilderness manageability problems if the area would be designated; however, under a nonwilderness situation, no wilderness manageability problems would exist.
19. EPA believes that while such a decision may be justified, the EIS should spell out in greater detail the reasoning behind this decision. The Final EIS should contain a more complete description of the Bull Gulch wilderness area, its unique geological, vegetational and wildlife characteristics. The EIS should also explain the management difficulties that would occur if the area were designated as wilderness. Finally, the EIS should carefully explain the management techniques that will be proposed to protect the visual, natural and primitive recreation values and why these techniques are preferable to wilderness designation.	129	19. This detailed information was included in the technical supplement to the DEIS (pp. 43 to 68) and will also be included in the final wilderness EIS.
Wilderness Management—Castle Peak		
1. Castle Peak, too, must be afforded permanent protection, particularly in view of the real possibility that revegetation would fail after its timber was felled.	2, 30, 80, 79, 74, 45, 43, 35, 9, 5, 65, 64, 5, 61, 122, 98, 60, 103, 29, 34, 4, 11, 70, 88, 10, 73	1. Revegetation of harvest areas is a standard forestry practice. No active harvesting has occurred on Castle Peak, but various ecological factors indicate that reforestation would be successful. The spruce beetle outbreak on Castle Peak in the 1940s and early 1950s killed vast acreages of Engelmann spruce. This epidemic resulted in an overstory of subalpine fir which has naturally regenerated the forest understory. The revegetation resulted in stands of prolific young fir saplings, and in some instances forest sites are overstocked. The soil resource on the forested portions of Castle Peak is found to be stable and suitable for forest management. Maps 4-2, erosion condition class, and 4-4, sediment yield (DEIS), reveal that erosion is moderate and sediment yield is very low. Road construction standards and water run-off structures would be used to minimize soil and water resource impacts. Forest management, as indicated in the Proposed Plan (FEIS), would occur only on sites identified as suitable for such practices.

Table 7-3. Comments and Responses—Continued

Comment	Raised By (index number)	Response
2. Castle Peak WSA (11,940 acres) is also listed as "NS". Map 3-18 shows almost the whole area to be lumbered for sawtimber. You may not have the funds and may ruin the area offering scenic and recreational opportunities. Bids for timber sales today are often barely above the minimum required. (USFS, WY, Bridger-Teton NF). Again, the scale tips toward wilderness designation.	5, 74, 115, 79, 80, 29, 103, 65, 61, 98, 122	2. One of the criteria used to formulate the DEIS alternatives is that "all alternatives are realistic and could be implemented (see DEIS, p. 13). An implicit part of this criterion is that funding will be available to implement the plan. The analysis for both the recreation opportunity spectrum (ROS) and visual resource management (VRM) state that impacts were not considered significant. Timber management is considered to conform to both ROS and VRM management objectives under the Proposed Plan. Federal revenue from timber sales are not the only economic impact to be considered. Timber management can provide other benfits such as improved wildlife habitat, increased water yield, and increased local income.
3. I would like to request the wilderness designation for Castle Peak because of its scenic and recreational opportunities. Since it is doubtful there will be a profit in timber sales, it would be a shame to destroy a scenic area.	7	3. Timber management, including harvesting, would be done in accord with VRM objectives which protect scenic values.
4. Castle Peak should have the same protection—its timber sales could not possibly outweight its value as recreation. (I understand that timber sales are not that successful anyhow).	11	4. Timber harvesting was not considered to be incompatible with recreation management under the Preferred Alternative (DEIS) and could enhance opportunities by increasing access to the area as desired by hunters and the Colorado Division of Wildlife. Proposed management in the area would provide opportunities for both motorized and non-motorized recreation. There are no factors that would limit the long-term success of timber harvesting.
5. I visited this area and found it to be very picturesque and beautiful. The imprints of man seem unnoticeable and definitely don't distract from the quality of the scenery that exist. I found the natural state of the area to be reason enough to warrant the protection of this area forever.	22	5. The naturalness of the WSA was recognized during the wilderness inventory and, as one of the mandatory wilderness characteristics, was one of the factors that resulted in identification of the area as a WSA. However, all of the planning criteria and quality standards must be considered in the study process.
6. I think that by keeping motorized recreation out, it would keep damage from happening to this irreplaceable piece of land.	22	6. Under the Proposed Plan (FEIS), the Castle Peak area would be designated as limited with ORV use limited to designated roads and trails. This limitation would restrict ORV use to specific roads and trails.
7. Hunting would still be allowed if this area was designated wilderness. The hunting would also improve because of this extra protection.	22	7. Neither wilderness nor nonwilderness were considered to have a significant effect on terrestrial wildlife. Both could have beneficial or adverse impacts. For example, wilderness designation could reduce habitat disruption caused by human activities but would also prevent habitat improvements, while the opposite could be true in a nonwilderness situation.
8. The addition of one more road could greatly change the entire region. Wildlife, plant life, and fish life could be greatly affected.	23	8. Our analysis indicates that one additional road would not have that significant of an impact.
9. The dangers in allowing timber harvest, at significant financial loss, do not outweigh any economic advantage, especially considering the hazards of erosion. The wilderness values, on the other hand, provide significant benefit if this area receives protection under the Wilderness Act.	23	9. Wilderness designation would provide benefits as documented in the technical supplement. However, nondesignation would not necessarily cause the loss of these values because of proposed management actions including ORV limitations and restrictions on utility and communication facilities.

10. Lumbering and the associated haul roads would cause significant siltation problems within the watersheds and further downstream. The lumbering would also adversely affect the wildlife habitat through destruction of nesting and denning areas and noise pollution from the trucks and saws.	61	10. Timber management can have both beneficial and adverse impacts on wildlife. These impacts can be both significant and insignificant and of a long- or short-term duration. These impacts vary with habitat types and, consequently, wildlife species involved, timing and duration of the harvest and types of design features/special operating procedures (see Appendix B, FEIS) involved. Mitigation measures would be included in timber sale environmental assessments to reduce these adverse impacts.
11. In short, these areas have the qualities of being close to Denver and to the Front Range metropolitan area. They have—or at least Castle Peak has fairly convenient access; to the extent that they do not have access, that is a benefit from wilderness prospective because that prevents overuse. And they have extraordinary natural characteristics that deserve a far more sympathetic recommendation from BLM than nonwilderness designation. Thank you.	64	11. The WSAs are within a day's drive (5 hours) of Denver and four other major urban areas in the state (see Table 1 on p. 9 of the technical supplement). However, the significance of providing wilderness opportunities within a day's drive of major metropolitan areas (SMSAs) is low because of the supply of existing wilderness and other potential wilderness that are also within a day's drive of these cities (see Appendix 2 of the technical supplement). Bull Gulch and Castle Peak have limited legal access, and Hack Lake has limited convenient physical access because of topography. Limited access could discourage visitation and overuse but could also channel use into a few areas and cause overuse of those areas.
12. The other conflicts for that area—timber—of course, some people have touched on that already, but the DEIS says that the value of the timber if it were harvested, and, of course, that is the question, is roughly on the same order plus or minus 50 percent as the value of the recreation resource, including hunting. I think it's fairly obvious that the recreation resource would be impacted to a degree if timber were cut in the area, so you're exchanging, or proposing to exchange a known economic value, which is the recreational value, for speculative value, which is the timber.	64	12. Timber management was not considered to be incompatible with recreation management under the Preferred Alternative (DEIS) or the Proposed Plan (FEIS). Since both activities could occur, there would not be an exchange of values.
13. The Castle Peak area should be given Wilderness designation because of its lovely scenery and the recreational opportunities it offers. Although this area does contain marketable timber, no national forests in Colorado make money on their timber sales. Therefore, we believe it is doubtful that Castle Peak would be an exception.	85, 79, 80, 45, 43, 34, 29, 103, 65, 61, 98, 122, 115	13. The U. S. Forest Service collected $500,387 in revenue from timber sales in Colorado in fiscal year 1982 (USFS Rocky Mountain Region Report on Timber Cut and Sold in Fiscal Year 1982). Federal revenue is not the only economic impact to be considered; harvesting would increase local income and employment. In addition, economics are not the only reason to manage the timber resource. Other reasons are maintaining or improving the health of the stand, improving wildlife habitat, increasing water yield, and reducing the fire hazard.
14. Moreover, the White River National Forest permits an adequate timber harvest absent the need to build the new roads which would be required in Castle Peak. Roads built in Castle Peak would worsen the steep slope soil erosion there, adding to the downstream silting problems. Similarly, timbering would probably leave severely damaged soil conditions on steep slopes, precluding successul revegetation. The riparian management plans for the area, as shown by maps, would conflict with timbering.	91	14. Map 3-2 (FEIS), Water Yield Management, shows that vegetation in the Castle Peak area is suitable for manipulation, which would include timber harvesting. No critical watersheds exist in the area. Map 3-5 (FEIS), Aquatic Habitat Management does show four stream segments north of Castle Peak recommended for intensive management. Map 3-6 (FEIS), Terrestial Habitat Management, also shows areas to be managed and protected as riparian habitat for waterfowl. Appendix B (FEIS) lists aquatic and riparian habitat stipulations which would be followed for any timber harvesting activity. These stipulations are designed to conserve and protect the habitat values which currently exist in the area identified on Maps 3-5 and 3-6 (FEIS).
15. We cannot support the reasoning that timbering is necessary to avoid forest fires. Fires are nature's way of doing things and wild areas like Castle Peak should be left to nature.	115	15. The DEIS does not state that timbering is necessary to avoid forest fires but that timber harvesting could help reduce the severe fire hazard by reducing the existing fuel load.

Table 7-3. Comments and Responses—Continued

Comment	Raised By (index number)	Response
16. Concerning the need to leave Castle Peak open for ORV use as a "scenic area for family camping" (p. 91), this is clearly not an urgent priority considering 1) the "relatively low ORV use presently occurring in the WSA" (p. 81); 2) "ORV use on public land is a small percentage of the total use for the region" (DEIS, p. 172); 3) 80 percent of the land area in the RA is open to ORV use in the Preferred Alternative; 4) 30 times more land in the RA is available for motorized than for non-motorized recreation; and 5) according to Map 3-19, large amounts of new roaded areas will be opened up in all alternatives.	125	16. The BLM did not identify the need to leave Castle Peak open for ORV use as a "scenic area for family camping." Rather, the quote is from a public comment received during the intensive wilderness inventory on the Castle Peak unit.
17. Even if roading in Castle Peak was justified on other grounds, it can be questioned on budgetary grounds alone. At a rough estimate of $5,000 per mile, it is unlikely that any of the proposed roaded uses would prove cost-effective, especially in light of the reliable and proven hunting income which would be lost in the process.	125	17. Hunting income would not be lost if legal and physical access were developed to and within the area and instead could increase. As stated in the assumptions on page 85 of the DEIS, acquisition of legal access in the only proposed management action considered to significantly affect visitor use and use trends. In the issue identification phase of the DEIS, access to Castle Peak was identified as a need by both hunters and the Colorado Division of Wildlife and is expected to result in moderate to high increases in recreational use of the Castle Peak area (see p. 84 of the technical supplement).
18. The timber and motorized recreation opportunities that are given precedence in the case of Castle Peak cannot justify exclusion of this area from wilderness. Timbering is a minor factor in the local economy in comparison to the recreation industry of which wilderness is an important component. There is ample evidence that motorized recreation opportunities far exceed demand in the area, while the opposite is the case with primitive recreation. To deny Castle Peak a Wilderness recommendation in favor of these resources is not justified. We find the BLM's apparent anti-wilderness bias to be unacceptable and inappropriate, and we urge the Bureau to reconsider and reverse its wilderness recommendations in the Final Environmental Statement.	4, 84, 30, 88, 75, 35, 91, 115, 7, 85, 79, 80, 43, 34, 29, 103, 65, 61, 98, 122	18. Although timber is not as important as recreation to the local economy, it is valuable. Determination of that value is not made on the basis of local or short-term economic conditions. If the timber resource satisfies the physical criteria necessary for economic value—sufficient timber size and density to offset any physical and environmental constraints—then the harvest of that timber would be feasible under long-term economic conditions. The timber on Castle Peak satisfies those criteria and could be a future source of employment and income to local Colorado residents. Also, economics are not the only reason to manage the timber resource. Other reasons include health of the stand and, in the case of Castle Peak, reduction of the severe fire hazard. Under the Preferred Alternative (DEIS) and Proposed Plan (FEIS), non-motorized recreational opportunities would not be eliminated entirely because of the proposed ORV limitation.
19. Any demand for more opportunities for motorized recreation can be answered in many other parts of the resource area.	30, 64, 75, 84, 62, 115	19. In a strict sense, demand for ORV opportunities can be met in other parts of the resource area since approximately 96 percent of the resource area would be in the open or limited categories. However, most motorized use in the resource area occurs in conjunction with other activities such as hunting. During the issue identification phase of the EIS process, the Castle Peak and Bull Gulch areas were identified by the Colorado Division of Wildlife and hunters as areas where there was a need for more motorized access. But the ORV limitation for Castle Peak would provide for non-motorized opportunities.

20. No provisions are made in the PA to protect Castle Peak WSA's Class A scenery in the event of no wilderness designation.	125	20. As stated in the technical supplement (p. 90) and shown on Map 3-13 in the FEIS, existing VRM classes within the WSA would not change, and the Class A scenic quality areas would continue to be managed as VRM Class II under the Proposed Plan.
21. Here and elsewhere, the Supplement gives the erroneous impression that wildlife and wilderness uses would continue largely unaffected by the proposed non-wilderness uses, even though, as stated on page 87 of the DEIS, naturalness would be lost "forever" throughout the WSA.	125	21. There are many actions or degrees of actions that would impair naturalness as defined in the Wilderness Act but would have a different effect on other resources including wildlife and recreation. For example, activities such as timber management can benefit wildlife habitat but would be substantially noticeable because of their location or distribution.
Wilderness Management—Hack Lake		
1. Hack Lake WSA. Map 3-22 pinpoints the area as semi-primitive non-motorized (see below), a prerequisite for wilderness designation that already exist.	5	1. The semi-primitive non-motorized ROS class is not a prerequisite for wilderness designation. The ROS system describes lands in terms of activities, settings, and experience opportunities but does not necessarily relate to outstanding opportunities for primitive and unconfined recreation defined in the Wilderness Act. However, the Hack Lake area has been identified as possessing high value recreation opportunities.
2. It seems peculiar to the lay person that Congress should require BLM to evaluate its lands for potential wilderness designation and then to have BLM say that the Forest Service has already decided for it. What is the point of the extensive analysis that BLM undertook if it is concluded on the basis of Forest Service policy?	21	2. Part of the extensive analysis is the consistency with other agency plans and policies. The Wilderness Study Policy states "FLPMA requires BLM plans to be consistent with State and local plans to the maximum extent the Secretary of the Interior finds consistent with Federal law and the purposes of FLPMA." The U. S. Forest Service has expressed concern that wilderness designation of the entire Hack Lake area would cause manageability problems with adjacent nonwilderness forest lands.
3. I recommend Hack Lake for wilderness as its slight timber potential is outweighed by its fishing and camping opportunities and scenic wildlife values.	7, 115, 65, 85, 11, 35, 9, 43, 70, 73, 74	3. Under the Preferred Alternative (DEIS) and the Proposed Plan (FEIS), the timber in the Hack Lake area was excluded from the forest base. Therefore, there is no conflict between forestry and fishing, camping, and scenic wildlife values (see Map 3-8, FEIS).
4. We realize that it is BLM's responsibility to evaluate the consistency of its actions with the plans of other federal agencies, but this is only one of six quality standards which BLM must consider in evaluating manageability criterion. The rationale appears to have given undue consideration to this one standard, whether or not its plan will conform with the plan of the Forest Service. A balanced approach would seem to require giving more weight to some of the other quality standards. For example, we don't feel that the rationale adequately addresses the impacts of nondesignation on wilderness values or local social and economic effects.	20, 21	4. The Wilderness Study Policy requires the analysis of all of the two planning criteria and six quality standards in the planning process. This analysis was done and is documented in the technical supplement. Included in this analysis is the impacts of nondesignation on wilderness values (described in the "no wilderness" or "partial wilderness" sections of each alternative) and local social and economic effects. Depending on the specific issues involved, some of the criteria may be less important than others in determining suitability. The rationale is simply an explanation of reasons for the recommendation.
5. I understand from looking at the BLM files, one individual is especially interested in motorized access to the area. Are there not other areas more suitable for motorized activity?	29	5. Under the Proposed Plan (FEIS), the area is recommended to be closed to all ORV use. Motorized use would be allowed in the portions of the resource area recommended as open to ORV use and allowed but restricted in the areas recommended as limited.

Table 7-3. Comments and Responses—Continued

Comment	Raised By (index number)	Response
6. However, I find no reason not to include the rest of the Hack Lake WSA in the wilderness system. Mineral potential is low and timber uneconomical, while scenic, wildlife and recreation values are high. The Flat Tops are my favorite outing country. I made four trips there last summer, one to the Sweetwater Lake area. I can support that the Flat Tops are extremely popular and sometimes crowded. I recommend protecting adjacent areas such as the Hack Lake WSA in response to increasing use of wilderness.	30	6. Under the Proposed Plan (FEIS), the portion of the WSA below the rim is recommended to be protected by various management actions including ORV closure, prohibition of timber harvesting, and unsuitable zoning for utility and communication facilities.
7. The only rationale we can see for recommending only 10 acres of Hack Lake is that there seems to be an assumption that Congress wants wilderness in that area to be up on the benches and not farther down, and I don't think we've seen that as a demonstrated assumption. We certainly haven't seen any documentation in terms of congressional intent from the legislation that has created the Flat Tops or anything such as that.	62, 109, 69, 63, 21	7. A letter received from the U. S. Forest Service in July 1981, stated "It is our feeling that Congress intended for the wilderness to be located above the topographic rim." An additional comment from the U. S. Forest Service received during the public comment period expressed the concern of manageability on nonwilderness national forest lands and the fact that the entire Hack Lake WSA is tied to the Flat Tops by only two narrow strips of land.
8. Page 100 Impacts from ORV Management. The BLM states that there is no known use in the area. If you will check your records you will find that statement false. I use the area and I know 7 other persons who use the area. How many motorized people use the area that I don't personally know? I find that statement to be totally irresponsible.	68	8. The statement referred to in the DEIS is correct. It refers only to the WSAs or portions that were recommended suitable. For the Hack Lake WSA, this is the 10 acres above the rim of the Flat Tops. The only way to physically get to these two areas is through the existing Flat Tops Wilderness which is closed to ORV use. ORV use below the rim of the Flat Tops was recognized during the study (see p. 22 of the technical supplement).
9. The trail to Hack Lake also continues onto USFS land and continues approximately 10 miles to connect with the jeep road to Emerald Lake. This trail will be considered under the White River Forest Plan and BLM closure would directly affect that portion of trail on USFS land.	68	9. The U. S. Forest Service trail to Emerald Lake is shown on the current (1981) U. S. Forest Service travel map as being closed yearlong to motorized travel.
10. The trail to Hack Lake forks approximately ⅜ mile from Hack. The left fork leads over the ridge to Hack. The main trail continues straight onto USFS land. At the very least, leave the lower trail open. The ridge would act as a noise buffer at the lake. I consider this unacceptable but at least the trail connecting with USFS land would remain open.	68	10. Use of ORVs would be inconsistent with management of the area under semi-primitive non-motorized ROS management objectives under the Proposed Plan (FEIS). Since the trail on the national forest is closed, closure of the Hack Lake trail would not be inconsistent.
11. And as a lawyer I'm concerned with this analysis because I believe when Congress was considering the boundaries for the Flat Tops Wilderness area, they were considering just Forest Service lands and, therefore, were not even considering these BLM lands. So I'm afraid to say that Congress had an intent to declare this area nonwilderness just seems inconsistent with the record to me. So I would recommend that the BLM go back to its Policy Act and consider whether or not this area actually does have wilderness values, and that, to me, is a stronger indication of congressional intent than what they were doing with the Forest Service lands.	69	11. The wilderness inventory identified the WSA as possessing wilderness characteristics, but this inventory did not include other potential resource values or uses. The purpose of the study phase is to determine the most appropriate use of the land and its resources through application of the planning criteria and quality standards in the BLM's Wilderness Study Policy and the multiple use analysis.
12. Why can't Hack Lake be managed for the Colorado River cutthroat trout under a wilderness designation?	88	12. There would be no conflict between management for Colorado River cutthroat trout and a suitable recommendation.

13. Because of its proximity to the Flat Tops Wilderness, the Hack Lake Wilderness would be a compliment by the existing wilderness. We would recommend transferring management of the entire area to the Forest Service so the two areas could be managed in conjunction. The good access to the Hack Lake area would facilitate use and management of the conjoined wilderness areas.	103, 105	13. The enhancement of the WSA by the opportunities in the Flat Tops Wilderness was documented in the inventory and in the technical supplement. However, the "proximity" of Hack Lake is contested in other comments including the U. S. Forest Service which states the WSA is only contiguous at two narrow points (see Map 3-11, FEIS). Transfer of administration upon designation as wilderness is included in the recommendation under the Proposed Plan (FEIS). Access to Hack Lake and the Flat Tops Wilderness would be maintained under either a wilderness or nonwilderness situation.
14. The Board questions the removal of the Hack Lake and Bull Gulch areas from further wilderness consideration studies. The Garfield County Comprehensive Plan states that recreational opportunities provided by wilderness areas are a vital part of Garfield County's tourism appeal.	108	14. Since both the suitable and nonsuitable portions of the Bull Gulch WSA must be reported to Congress, it is not actually being removed from further wilderness consideration. The nonsuitable portion of the Hack Lake WSA will be released from further wilderness consideration upon approval of the Proposed Plan (FEIS), but the proposed management will protect the recreation opportunities which the area provides. The master plan also states that backcountry areas remain accessible to the public and those areas should not be adversely affected by industrial or other large-scale development. Even under a nonwilderness situation, the management of both areas under the Proposed Plan would likely be consistent with Garfield County's Master Plan.
15. Recreation use estimates for the Hack Lake WSA appear to be severely underestimated. Use of the Ute Trail through the WSA varies greatly during the year but appears heaviest during hunting season. Large numbers of hunters camp in the Big Springs region of the White River National Forest and many will day hunt far into the WSA. Others crop into the area from the "W" Mountain Trail. Early summer use is not nearly as heavy but I believe total numbers would be greater than those represented on page 22 of the Wilderness Study Analysis.	117	15. As stated on page 22 of the technical supplement, no complete recreation use data for the WSA is available, and the numbers reflect the best estimates that could be made with the information available.
16. The Aspen Wilderness Workshop would like to see the entire Hack Lake WSA recommended as wilderness. It is inappropriate to use topographical features as wilderness boundaries when land on both sides of the feature is suitable to be within the boundaries.	115	16. The BLM's Wilderness Study Policy cites the use of partial wilderness alternatives to resolve wilderness manageability concerns or resource conflicts. The use of topographical features as boundaries that would be more recognizable to the public than an existing WSA boundary or a legal description can be appropriate for partial wilderness alternatives.
17. This area is not recommended for inclusion in the Flat Tops Wilderness, except for that portion above the Flat Tops rim because of its potential for difficult manageability. Inclusion would create an area tied to the Flat Tops by two narrow strips of wilderness and essentially surrounded by nonwilderness multiple use lands. It would also create a small inholding of nonwilderness National Forest land unless the National Forest portion of the Flat Tops Wilderness were changed. This becomes apparent when the Hack Lake WSA is laid against the Flat Tops Wilderness boundary. For this reason, I continue to feel that my earlier recommendation is appropriate.	118	17. The recommendation in the Preferred Alternative (DEIS) has been carried forward into the Proposed Plan (FEIS).

Table 7-3. Comments and Responses—Continued

Comment	Raised By (index number)	Response
18. The BLM is aware of the Interior Board of Land Appeals decision regarding wilderness consideration of tracts less than 5,000 acres and the subsequent removal of such land from further consideration by the Secretary of the Interior. Eagle Mountain and Hack Lake have been so removed.	132	18. The Eagle Mountain and Hack Lake WSAs were released from wilderness consideration under Section 603 of FLPMA on December 30, 1982, by a Secretarial Order (*Federal Register,* Vol. 47, No. 25, pp. 58372-58374). However, this order also stated that released areas could be considered for other forms of protective management, including wilderness consideration under Section 202 of FLPMA. The Eagle Mountain and Hack Lake WSAs are being considered for wilderness designation under Section 202 of FLPMA (see Chapter 4 (FEIS), Affected Environment).
19. Hack Lake is another case in which there are no mineral resource conflicts and in which timbering is uneconomical. It has strong primitive recreation and scenic values, as well as abundant wildlife. Its recreation value would add reliable revenue to the local economy. As with Bull Gulch, administrative restrictions as to mineral resource exploitation will not protect the wilderness values. Since there are no conflicts, this means the area is prime for wilderness protection by Congress.	91, 64, 62, 61, 103	19. The BLM's Wilderness Study Policy also identifies non-resource factors that must be considered including manageability, public comment, local, social and economic effects, consistency with other plans, and diversity in the National Wilderness Preservation System. Therefore, resource conflicts or benefits are only a part of the total analysis and recommendations cannot be made on this factor alone.
Areas of Critical Environmental Concern		
1. I feel adequate management tools are available to the BLM without adding another "critical" designation to manage.	44	1. The *Federal Land Policy and Management Act of 1976* (FLPMA) and the BLM's planning regulations require the consideration of areas of critical environmental concern (ACECs).
2. Along those same lines, we note on page 33 that nomination of the Blue Hill Archaeological District to the National Register of Historic Places is not included under the Continuation of Current Management Alternative. Further, page 35 states that areas of critical environmental concern (ACECs) would not be designated under this alternative. Since there is no obvious explanation for this, we are curious as to the reason for these omissions from the current management plan and recommend that it be discussed in the final EIS.	93	2. As stated on page ix of the DEIS, the Continuation of Current Management Alternative is the no action alternative and identifies the current level of management. Since no ACECs currently exist, none were included under the Continuation of Current Management Alternative.
3. It also appears from Table 3-19 on page 36 that Keyser and East Canyon Creeks would not be designated as ACEC's under the Preferred Alternative. There is also some question as to the status of Thompson Creek under the Preferred Alternative, with Table 3-19 indicating that it would be designated as an ACEC under that alternative and page 37 saying it would not. This seems inconsistent, and we suggest the final EIS contain a discussion on how an area could be an ACEC under one alternative and not be under another.	93	3. Table 3-19 is in error. See the Errata, Appendix L (FEIS). A recommendation to designate an ACEC is the same as any other recommendation and can vary between alternatives depending on the emphasis of each alternative and the analysis.
4. What impact will the designation ACEC have on mineral development adjacent to an ACEC or have on access to private land which requires passage through an ACEC? I question the ACEC designation, especially for visual resources. The BLM has adequate tools for controlled management without additional designations. This has been too amply demonstrated in the past.	44	4. ACEC designation would not affect mineral development outside an ACEC. None of the proposed ACECs would affect access to private land. FLPMA Section 103(a) specifically includes scenic values as one of the resource values for which ACEC designation can be considered.

5. We would like to see the lower Colorado River corridor designated an Area of Critical Environmental Concern to allow for the strong protection of great blue heron rookeries, bald eagle wintering areas, razorback sucker habitat, and other unique resources. As the Draft notes on page 163, this corridor is being subjected to heavy development pressure, and the irreplaceable resources of the riparian zone are being lost at a rapid rate. The Cooperative Management Area designation is a step in the right direction, but we feel that this is truly an Area of Critical Environmental Concern and should be afforded the greater protection that such designation would allow.	84, 109	5. Under the Proposed Plan (FEIS), the public land within the designated cooperative management zone along the Colorado River between New Castle and DeBeque has been designated as an ACEC.
Visual Resource Management		
1. What is the definition of "full protection for the visual resource"?	44	1. The management of visual resource management (VRM) Class I areas provides primarily for natural ecological change only and would protect visual quality from man-caused deterioration.
2. The Deep Creek designation is of questionable merit with the approved CF&I limestone quarry adjacent.	44	2. The proposed Deep Creek area of critical environmental concern (ACEC) is only for the canyon. The ACEC designation should not affect or be affected by the CF&I quarry.
3. The concerns expressed by this document towards our (the publics) resources of land, water, vegetation, animal, and other (?) visible ones is commendable, but is it necessary to reidentify and reclassify those resources which are adequately covered by other management protection measures? This is a ploy, in my humble opinion, to establish another level of bureaucracy within the BLM. Next we would have a Director of Visual Resources. Followed by appointments of Administrative Directors of Land, of Water, of Vegetation, of Animals, and of Other Visual Resources. (Possibly the Department Director could initially handle the administrative duties of Other Visual Resources if his executive staff support was increased.)	44	3. The BLM's 8400 Manual requires the consideration of visual resources in all environmental assessments, all land-use planning decisions, and resource project implementations. The *Federal Land Policy and Management Act of 1976* (Section 102(8)) directs that the public land be managed in a manner that will protect the quality of scenic values.
4. Blanket designation on both private (56 percent of the area) and public lands is beyond the scope of the BLM's responsibilities or rights. I recommend that the visual resource management proposals be dropped. Reasonable safeguards are already in place to provide BLM with needed management strategies.	44	4. The consideration of visual resources is required (see response to comment 3). All lands in the resource area were inventoried and classified in the VRM inventory in order to determine the overall visual qualities of the area. However, management under VRM concepts would be confined to public land and, therefore, does not infringe on the rights of other landowners.
5. The visual resources of Glenwood Springs are a key to its attractiveness, hence to its economy. The City recommends that the visual resource management classes for BLM lands visible from within the City be upgraded to Class II or III. Classifications beyond this crucial view plane may be as shown in the Preferred Alternative (Classes III and IV). "Retention of the landscape character" (Class II) should be a management objective throughout the City's viewshed.	90	5. The areas visible from the city are VRM Class II (except for the area identified as urban) under all alternatives in the DEIS and the Proposed Plan (FEIS).
6. Visual Resource Management—All visual resource management maps indicate the area around Red Hill north of the intersection of Highways 82 and 133 as Class IV visual resource. The area is visually important to Carbondale. It is important that the area be improved visually but that no further deterioration of the resource occur.	112	6. The areas indicated as VRM Class IV cannot be seen from the town of Carbondale. The areas that can be seen from Carbondale are shown as VRM Class II. The objective for VRM Class II is retention of the landscape character where changes caused by a management activity should not be evident in the characteristic landscape.

Table 7-3. Comments and Responses—Continued

Comment	Raised By (index number)	Response
7. We are also opposed to changing the 1,365 Class III acres to Class IV designation because of development on private land. This would be seeking the lowest common denominator whereas the BLM should continue to preserve the natural landscape character that still exists in these areas. Existing developments on private lands should be encouraged to revegetate and future developments should be required to do so through federal, state, or local permits. The BLM should set the example, not follow it.	115	7. Since public land tracts in this area are small and scattered, they have little or no significant influence on the visual quality of the surrounding landscape. Management under VRM Class IV objectives is considered to be more consistent with developments on adjacent private lands.
8. BLM recognizes these areas as visually sensitive (p. 81-82). The Naval Oil Shale Reserve is even identified by the BLM as qualifying for ACEC designation (p. 81). We disagree with reclassifying this important winter range and watershed area to Class III. We recognize this possibly presents an additional obstacle to oil shale development but, until such development becomes more efficient, more environmentally compatible and more economically feasible, we support strong restrictions to protect the visual resources of the area. The BLM document admits Class III areas could be further degraded in the future. While it is true that much of the Naval Oil Shale Reserve is outside the "major" view areas, these other factors must be considered, too.	115	8. The DEIS recognizes the Naval Oil Shale Reserve (NOSR) possesses high scenic quality but does not identify it as qualifying for consideration as an ACEC (p. 81, DEIS). The change in classification on the NOSR was not recommended because of oil shale development, but rather to allow vegetation manipulations to increase wildlife and livestock forage (p. 37, DEIS).
9. It is important that Class I, not simply areas of critical environmental concern, protections be established and enforced for Bull Gulch, Deep Creek and Thompson Creek. Thompson Creek needs to be included on this list because it is an important recreation area. It is close to population centers and is constantly used by locals and visitors alike in all seasons of the year. Its unique character and physiographic and scenic features are recognized by the BLM (pp. 36 and 81 of DEIS) and we would like to see it protected. ACEC designation is not enough protection for these areas. Class II designation provides for "retention of overall landscape character" (p. 254). This phrase is too open to interpretation and we support Class I protections for these three areas.	115	9. The classification on these three areas has been changed to VRM Class I under the Proposed Plan (FEIS).

10. The highly-valued visual resources of the area would also decrease commensurately under the EDA and PA as a result of moderate to high levels of development on public lands combined with a high level of private development. The DEIS notes that "cultural modifications" associated with development—such as power lines, gravel pits, mines, communications sites, ORV use areas and dump sites—have already depreciated scenic quality. However, the DEIS fails to include the additional impact of increased "cultural modifications" in any section under the PA and EDA. Additionally, under the PA, 45,332 acres of tentative VRM Class II would be changed to Class III and managed under less restrictive objectives. The impact of these changes would be particularly adverse on a large number of people because the downgraded area is precisely adjacent to where the greater part of any additional growth will occur near the towns of Eagle and Parachute or Rifle (p. 76 and Map 3-31).	124	10. In the Economic Development and Preferred Alternatives (DEIS), visual quality would be maintained on 90 and 92 percent, respectively, of the public land in the resource area. As stated in the VRM assumptions (p. 87, DEIS), any degradation of visual quality within the limits of a particular VRM class was not considered significant. Therefore, only those changes that would cause a change of class were considered to be significant, and as stated in the DEIS (pp. 154 and 178) the overall detrimental effects would be low except in the Economic Development Alternative, in which there would be moderate to high adverse impacts on approximately 7,700 acres near Wolcott and Eagle. The impact is low because the changes are generally not in major viewsheds. It is impossible to predict the additional impact of increased cultural modifications other than those identified in the DEIS and FEIS. We do not know the number, location, size, or extent of additional projects that may be proposed or whether they will be inconsistent with the management objectives for the VRM class or classes in which they would be located. This type of analysis would have to wait until the environmental assessments are done on particular projects.
11. The visual deterioration in the Parachute Creek and Rifle regions would also be compounded by serious air quality impacts due to oil shale development (p. 63). In addition to deterioration from timber harvesting and vegetative manipulation, visual quality of these areas could be further degraded to an unknown degree, since any future proposals would be subject to less restrictive objectives (p. 178).	124	11. The visual deterioration in the Parachute Creek and Rifle regions primarily affects private lands over which BLM has no authority or control. The last sentence agrees with our assessment in the DEIS and FEIS.
12. Deep Creek, Thompson Creek, and Bull Gulch are proposed for VRM Class I in both the RPA and the EDA. No areas are proposed for Class I VRM management in the PA, despite the importance of the community's scenic qualities to its economic base and quality of life. This would seem to be an unjustified concession to the timber and minerals interests, which is not conducive to the best interests of the community.	125	12. Since Deep Creek and Thompson Creek have been recommended for mineral withdrawals and restrictions on mineral leasing and sales and since no timber harvesting is proposed for the three specific areas proposed for VRM Class I in the Resource Protection and Economic Development Alternatives (DEIS), this cannot be considered as a "concession to the timber and minerals interests." It should be remembered that VRM is only a part of the total management proposed for these areas. However, we are changing Deep Creek, Thompson Creek, and Bull Gulch to VRM Class I in the Proposed Plan (FEIS) because of their special designations and high scenic quality.
13. Under the Preferred Alternative, the current visual resource classification would be changed from Class II to Class III in the entire area surrounding the East Fork of Parachute Creek, including the Naval Oil Shale Reserve (NOSR). Consistent with current construction of access roads, mining, and shale oil retorting facilities, a Class V designation is more appropriate for UOC's Long Ridge property. In addition, it should be recognized that while the proposed visual resource classification on the NOSR may be appropriate at this time, it will be inconsistent with and should be subordinate to any future development of the NOSR. The existence of UOC's existing shale oil upgrading plant, single status housing camp, and proposed reservoir in the main stem of Parachute should be recognized in classification of the lands as well.	126	13. Although private lands are included in the VRM classifications, the management objectives are only applicable to public lands. In addition, the classifications can be changed as developments occur on private lands to keep inventories current. Depending on the scale and scope of future developments on the Naval Oil Shale Reserve, the VRM classifications may or may not be inconsistent. As with any resource, the VRM classifications would be evaluated in the environmental analysis of a proposed project.

Table 7-3. Comments and Responses—Continued

Comment	Raised By (index number)	Response
Land Tenure Management 1. I have a very strong concern with two tracts that you have designated for disposal. I guess I just need to show you where they are; then you'll know what I'm talking about. I will try to describe them for the record. These two tracts of land—I don't know the proper name of them you give them—but they're BLM driveways to the old National Forest Range; and one of them provides the only legal access to Hubbard Cave for the public to get into. If this tract of land were sold—and it would be very practical to assume it would be, because I think that's designated for sale—yeah, "land suitable for disposal, priority for public sale." That's up among the subdivisions right now, and it's the only way the public can get into a portion of the national forest land where Hubbard Cave is; and I think that's totally opposed to your criteria you set aside in your EIS for disposal lands. Also, that's in winter range, deer winter range. If it sold it could be subdivided, and I think wildlife would lose out there. That tract of land to the east of that, it's green, that's priority for exchange. I went deer hunting there this fall. I know a lot of people hunt on there. I know it's also a driveway to the national forest for cattle. And I disagree with that tract of land being designated for disposal.	18	1. The first parcel of land which you have identified, in Secs. 17, 18, and 19 of T. 6 S., R. 88 W., 6th P.M., is within a disposal zone under the Proposed Plan (FEIS). In the Assumptions section of the FEIS, it is stated that legal access will be reserved whenever it is important to maintain public access for adjacent federal or state lands. The inclusion of this parcel of land within a disposal zone is consistent with the general criteria used to formulate alternatives (p. 13, DEIS), the specific criteria (p. 47, DEIS), the objectives of the Land Tenure Adjustments section (pp. 38-39, DEIS), and the considerations used in determining land tenure adjustments (pp. 225-226, DEIS). The second parcel of land which you have identified, in Secs. 18, 19, 29, 30 and 31 of T. 6 S., R. 87 W., and Secs. 25 and 36 of T. 6 S., R. 88 W., 6th P.M., is within a rentention zone under the Proposed Plan.
2. Among the most questionable aspects of the DEIS is the recommendation to dispose of 23,000 acres of BLM owned land, about half, by sales. Since the land tenure program is a recent brainchild of the current administration, which sharply diverges from the previous case-by-case approach, the final RMP should assess its impact on the resource area. As a major federal action which will severely reduce critical winter range and adversely impact other resources, the program may also require a full scale environmental assessment. Efficient management is a commendable objective of this program, but can and should be accomplished through land exchanges rather than land sales so that the BLM maintains its overall resource base. Wildlife habitat and other natural resources are better managed by the BLM than by the private sector. I would, therefore, like to see this section of the RMP, as well as Map 3-34, identify not only lands for disposal, but lands whose acquisition would consolidate and improve manageability of resources such as winter range. BLM lands are better used in exchange to allow BLM to consolidate its existing holdings than to supply funds to the Federal Treasury where they will go for defense and other national debts and be lost forever to resource management.	66	2. The Proposed Plan (FEIS) identifies 15,500 acres of public land within disposal zones (see Chapter 3, Proposed Plan, Land Tenure Adjustments). The Proposed Plan does not give priority to any one method of disposal. The methods for disposal of public land are listed in Appendix G (FEIS). Exchanges are recognized as a valuable management tool and will be used where appropriate. However, current BLM policy emphasizes that the disposal of public land should occur through sale if the criteria of Section 203 of the *Federal Land Policy and Management Act of 1976* (FLPMA) are to be met. The Proposed Plan directly assesses the impacts of the Land Tenure Adjustment Program on the resource area. Impacts from land tenure adjustments are identified in the Environmental Consequences Chapter. We will continue to be interested in acquisition and exchange proposals that enable us to consolidate and improve the manageability of public land within retention zones. However, acquisition of private land implies an interest on the behalf of the private landowner to dispose of his lands. We will consider any proposals for acquisition of private land in retention zones when initiated by the private landowner.

3. The Sierra Club believes strongly that the Federal Government is now proposing to sell entirely too much of its "excess" land. This is also true in the GSRA. We believe that by far the first priority in any land tenure adjustments should go to exchanges, not sales. This is especially true in the GSRA because of the importance of many of the parcels to game animal winter range. If at all possible, scattered winter range areas should be blocked up so that their consolidated area covers the most crucial sections of the winter range. The statement on p. 175 that land sales may lead to a depressed local property market is yet another reason to reduce such sales to the lowest possible level. The total acreage adjustment should not exceed that proposed for the RPA.	76	3. We recognize that the increase in the supply of unimproved lands may have a slight downward effect upon the price of similar lands (p. 175, DEIS). An assumption of the DEIS is that "disposal of identified tracts of land would be dispersed over the life of the plan if necessary to diffuse adverse economic impacts" (p. 86). See also response to comment 2.
4. We note that land tenure adjustments may result in the loss of over 6,000 acres of critical winter range in the Roaring Fork Capability Unit. This loss could translate into unacceptable depletions of big game populations. We request that any adjustments which include critical winter range be limited to exchanges for land of similar value in the same general area so that the maintenance of local wildlife populations is assured.	84	4. The Proposed Plan (FEIS) has emphasized the retention of public land with important wildlife values, including big game crucial winter range. In the Roaring Fork Capability Unit, 2,708 acres of public land are in disposal zones, a reduction of 4,255 acres from the Preferred Alternative (DEIS). This reduction in acreage is due primarily to the placement of large tracts of public land that contain crucial winter range in retention zones. Small, isolated tracts of public land remain in disposal zones (see Map 3-14, FEIS). See also response to comment 2.
5. Page 70. BLM manages over one-half the winter range, or 400 square miles. 14,730 acres (6 percent) of this is to be sold. We simply cannot understand this when for 40 years most western state wildlife agencies have been buying winter range—and for $10 million BLM will sell this priceless commodity. This priority is completely contrary to the public interest.	86, 135, 87	5. The Proposed Plan (FEIS) has emphasized the rentention of public land with important wildlife values, including big game crucial winter range. The Proposed Plan has placed 7,444 acres of public land providing crucial winter range in retention zones (Map 3-14, FEIS) that had been in disposal zones under the Preferred Alternative (DEIS). This reduction in acreage is due primarily to the placement of large tracts of crucial winter range in retention zones. Small, isolated tracts of public land remain in disposal zones. The land remaining in disposal zones cannot be effectively managed because of its size, shape, proximity to developed private lands, access, or other characteristics.
6. Acquisition of land adjoining my ranch described in previous letter.	95	6. Lands within a retention zone may be suitable for transfer into private ownership under any of the exceptions to retention zones (Appendix G, FEIS). Resolution of existing unintentional trespass, both occupancy and agricultural, is considered as an exception to the retention zone.
7. We oppose disposal of big game migration routes and winter range lands, unless this is done in exchange for similar habitat. Here we refer specifically to the 6,000 or so acres in the Roaring Fork Capability Unit slated for disposal.	115	7. The FEIS has been changed (see Map 3-14). See also response to comment 4.
8. Thus, it is the Board's position to support maintaining big game populations that will continue to attract hunters to the area. One goal of the County Comprehensive Plan is to protect major wildlife habitats. Therefore, the recommendation in the Economic Development Alternative to dispose of over 5,000 acres of crucial winter range for big game in the Cattle Creek area is inconsistent with Garfield County's Comprehensive Plan.	108	8. The Proposed Plan (FEIS) has emphasized the retention of public land with important wildlife values, including big game crucial winter range. The recommendation to dispose of approximately 5,000 acres of public land in the Cattle Creek area under the Proposed Plan (FEIS), as proposed in the Economic Development Alternative (DEIS), has been deleted.

Table 7-3. Comments and Responses—Continued

Comment	Raised By (index number)	Response
9. It is our understanding the Board will be given the opportunity to review each land sale or transfer, prior to any action being taken by the BLM. At this point, the Board would like to suggest placing conditions we feel are necessary. The Board is concerned that appropriate zoning is acquired by private individuals or groups who purchase public lands. This zoning will be subject to existing land uses in the area as well as the Garfield County Comprehensive Plan goals for the particular area in question. In regard to this, the Board asks to be given a reasonable time period to review actions which will affect Garfield County. The Board would also encourage the BLM to give priority consideration to local governments that are interested in the purchase, exchange and/or negotiation of Federal lands subject for disposal.	108	9. Local governments will be consulted in determining priorities for disposal, and will be given prior notification of any pending transaction. Section 210 of FLPMA states: "At least sixty days prior to offering for sale or otherwise conveying public lands under this Act, the Secretary shall notify the governor of the State within which such lands are located and the head of the governing body of any political subdivision of the State having zoning or other land use regulatory jurisdiction in the geographical area within which such lands are located, in order to afford the appropriate body the opportunity to zone or otherwise regulate, or change or amend existing zoning or other regulations concerning the use of such lands prior to such conveyance. The Secretary shall also promptly notify such public officials of the issuance of the patent or other document of conveyance for such lands." The BLM will continue to work closely with the counties in determining priorities for the Land Tenure Adjustment Program. Under Section 203(f) of FLPMA, the Secretary may give consideration to the state and to local governments, as well as any other person, in order to recognize equitable considerations or public policies. However, current BLM policy emphasizes that the disposal of public land should occur through public sale under competitive bidding procedures if the criteria of Section 203 of FLPMA are to be met.
10. Land sales. The RMP states that, under the preferred alternative, lands with "important resource values" would be given a "priority for exchange" rather than for sale. This is not clearly reflected in the criteria in Appendix G. It would be desirable to divide the lands for disposal into two separate categories—lands for sale and lands for exchange. This would allow the BLM to maintain adequate holdings to protect important resource values on an area-wide basis. In addition, we urge the BLM to give first preference to existing grazing permittees on any land sales.	109	10. Purchase preference rights for grazing permittees or any other persons are not established policies at this time. Under Section 203(f) of FLPMA, the Secretary may give consideration to the state, to local governments, to adjoining landowners, or to any other person in order to recognize equitable considerations or public policies. However, current BLM policy emphasizes that the disposal of public land should occur through public sale under competitive bidding procedures if the criteria of Section 203 of FLPMA are to be met. See also response to comment 2.
11. Land tenure adjustments are discussed in several places in the EIS, but not always consistently. On pages 39 and 166 it is stated that the disposal of 14,730 acres, or 6 percent of the total big game crucial winter range would have significant long-term effects, while crucial winter range would have significant long-term effects, while on page 47, it is stated that these lands do not have important resource value. We agree with the former, and generally oppose any sale of big game crucial winter ranges on public lands. The DOW requests the opportunity to comment on individual proposed public land sales, trades, or exchanges, to assess the value of these lands for wildlife. Land tenure adjustments in R. 85 W., T. 6 S., at Lookout Mountain provide public access to Lookout Mountain and the disposal of this land could be inconsistent with Specific Criteria No. 7 (page 48).	109	11. Page 47 of the DEIS states: "The lands identified for disposal in the Preferred Alternative were chosen to provide for better management of the resource area. These lands generally are small scattered tracts that are difficult and inefficient to manage and in most cases do not have important resource values. Those lands with important resource values, but still felt to be of better use in private ownership, were identified as priority for exchange rather than sale to help block up ownership in other public land areas." We do not feel that this is inconsistent with the more specific context of statements on pages 39 and 166. In the Assumptions section of the FEIS, it is stated that legal access will be reserved in patents issued whenever it is important to maintain public access for adjacent federal or state lands. This is consistent with specific criterion number 7 (DEIS, p. 48). See also response to comment 5.

12. Further, we would personally like to request notification (if at all possible), of BLM lands subject to sale in the Cattle Creek/Missouri Heights area so that we may possibly acquire some properties as open non-developed land.	113	12. Notification of all public sales will be provided for the general public through public notices in local and regional newspapers and through publication in the *Federal Register*.
13. Most important to us is the Land Tenure Adjustments section. We recommend that the economic development alternative be rejected in favor of the resource protection alternative or the preferred alternative. As development continues in the Missouri Heights area and in the area in general, open space and critical winter range will be at a premium. The open rural character of our area should be maintained and not be subject to subdivision or further urbanization. The public lands provide an excellent resource for recreation including hunting, fishing, skiing and hiking. We recommend that the BLM retain in public ownership all of the lands in the upper and lower Cattle Creek drainage in particular and in most of the resource area. We recognize the difficulty in managing very small parcels (40 acres or less not considered winter range), but we request that the BLM retain all larger parcels for public benefit.	113	13. Under the Proposed Plan (FEIS), public land in the Cattle Creek drainage has been placed in retention zones, with the exception of four small isolated parcels (see Map 3-14). The Proposed Plan identifies 15,500 acres of public land in the resource area as suitable for inclusion in disposal zones (Map 3-14, FEIS), a reduction of 7,745 acres from the Preferred Alternative (DEIS). This reduction in acreage is due primarily to the placement of larger tracts of crucial winter range in retention zones. Small, isolated tracts of public land remain in disposal zones. The land remaining in disposal zones cannot be effectively managed because of its size, shape, proximity to developed private lands, access, or other constraints.
14. Map 3-34. This map shows all lands in the immediate Aspen area in the "Disposal" category. This would include the public parking area and city water facilities on Red Mountain on Lot 22, Sec. 7, T. 10 S., R. 94 W. As we have discussed with your staff previously, we would prefer this area to remain in public ownership because it provides important winter access into Hunter Creek.	114	14. The parcel of public land which you have identified, in Lot 22, Sec. 7, T. 10 S., R. 94 W., 6th P.M., is within a retention-cooperative management zone under the Proposed Plan (FEIS).
15. You show a parcel for disposal in Secs. 3, 4, and 10, T. 9 S., R. 85 W., which we would like to see retained in public ownership. This parcel contains big game winter range, plus a road for which right-of-way should be preserved.	114	15. The parcel of public land which you have identified, in Secs. 3, 4, and 10 of T. 9 S., R. 85 W., 6th P.M., is within a retention zone under the Proposed Plan (see Map 3-14, FEIS).
16. Page 30. In every alternative, you propose disposal of lands resulting in "significant adverse impact on big game through loss of crucial winter range". In light of the shrinking winter range situation on the Western Slope, it seems land adjustment objectives should recognize the importance of maintaining "crucial" winter range acreages.	114	16. See response to comment 5.

Table 7-3. Comments and Responses—Continued

Comment	Raised By (index number)	Response
17. More specifically, the Preferred Alternative for Land Tenure Adjustments does not specifically provide for disposal of four small tracts of public land located in Township 7 South, Range 90 West. Two of the parcels are eighty acres in size, have no public access, and cannot as a practical matter be managed or utilized by the public. A third parcel contains approximately 160 acres and is not contiguous to other BLM lands. In addition, topographical constraints restrict access thereby limiting public use as well as adversely affecting grazing programs and fencing requirements of adjoining landowners. The fourth parcel is larger and contains approximately 640 acres of summer pasture land. Over five miles of fence would be required to separate public lands from private lands due to an erratic boundary/ ownership pattern. Management of the parcel by BLM or of the adjoining private lands by its owner is essentially impossible due to the unusual ownership pattern, steep topography and severe climatic conditions. Sale or exchange of the lands to effect a consolidation of public lands and private lands would clearly be beneficial, however, it is not apparent that the Draft Resource Plan recommendations would permit such Land Tenure Adjustments as it is presently written. It should be noted that the Draft Resource Plan-Preferred Alternative provide for disposal by sale or exchange of other small tracts located within the same resource area. The inconsistency will confuse any subsequent efforts to effect sales or exchanges which are requested by this letter.	116	17. The parcels of public land which you have identified, in Secs. 25, 26, 27, 34, 35 and 36 of T. 7 S., R. 90 W., 6th P.M., are within a disposal zone under the Proposed Plan (see Map 3-14, FEIS).
18. In conclusion, please consider this letter as a formal request to purchase the subject parcels, in accordance with your requirements, from the Department of Interior. Should BLM determine it would be more beneficial to exchange the four parcels for similar lands in the same Township which are owned by me and which are contiguous to other public lands managed by BLM, please advise me.	116	18. See response to comment 2.

19. Clearly, my primary concern is the proposal to designate certain tracts of land for disposal. Specifically, four tracts are BLM driveways to the National Forest. The most critical one is the driveway located in Secs. 17, 18, and 19, T. 6 S., R. 88 W. This driveway is used by the National Forest permittee to get his cattle to the Forest, provides the only motorized legal access to Hubbards Cave, and is heavily used by recreationists. In addition, this area is shown on your map 4-5 as crucial deer winter range. This tract is shown in your preferred alternative as priority for public sale. I believe this action would be in violation of your General Criteria to Formulate Alternatives (p. 13, no. 2) and your Specific Criteria Used to Select Preferred Alternative (pp. 47, 48, nos. 1, 3, 4, and 7). Sale or exchange of this tract would eliminate our permittees ability to access the Grand Mesa C&H Allotment on the west end. This access is critical for implementation of our Allotment Management Plan developed in 1982. The second tract is designated priority for exchange, and is the driveway around Consolidated Reservoir, just east of the first tract I mentioned. The uses of this tract are Forest access for cattle and big game hunting. Although it is not shown as crucial winter range, it is winter range. If both of these tracts were not public land, we might lose the ability to graze 298 head of cattle for 1,216 AUMs annually. This would force one, if not both of the permittees out of business and would allow available forage to be left unallocated. The third and fourth tracts are the driveways to our East and West Sopris C&H Allotments and are located in Secs. 29, 32 and 35, T. 8 S., R. 87 W., near Dinkle Lake. Elimination of these tracts would prevent cattle authorized on your Crown, Crown Common, Vasten, Crown Individual, and Prince Creek allotments from legally accessing the National Forest where 1,600 AUMs annually are permitted. Your Land Tenure Adjustments appendix (pp. 225, 226), also indicates these tracts are more adequately classified under Retention. I strongly disagree with your proposal to classify them for disposal.	118	19. The first parcel of land which you have identified, in Secs. 17, 18 and 19 of T. 6 S., R. 88 W., 6th P.M., is within a disposal zone under the Proposed Plan (FEIS). In the Assumptions section of the FEIS, it is stated that legal access would be reserved whenever important to maintain public access for adjacent federal or state lands. The inclusion of this parcel of land within a disposal zone is consistent with the general criteria used to formulate alternatives (p. 13, DEIS), the specific criteria (p. 47, DEIS), the objectives of the Land Tenure Adjustments section (pp. 38-39, DEIS), and the considerations used in determining land tenure adjustments (pp. 225-226, DEIS). The second parcel of land which you have identified, in Secs. 18, 19, 29, 30 and 31 of T. 6 S., R. 87 W. and Secs. 25 and 36 of T. 6 S., R. 88 W., 6th P.M., is within a retention zone under the Proposed Plan (see Map 3-14, DEIS). The third parcel of public land which you have identified in Secs. 29 and 32 of T. 8 S., R. 87 W., 6th P.M., is within a disposal zone under the Proposed Plan. Access for stock to adjacent national forest land is available on the Dinkle Lake Road, for which Pitkin County holds a right of public access. Further, in the Assumptions section of the FEIS, it is stated that legal access would be reserved whenever it is important to maintain public access for adjacent federal or state lands. The fourth parcel of public land which you have identified, in Sec. 34 of T. 8 S., R. 87 W., 6th P.M., is within a retention zone under the Proposed Plan (see Map 3-14, FEIS).
20. A brush which paints out all parcels of 100 acres or less covers too wide a stroke. A more subtle approach is needed. Although isolated plots of less than 100 acres may have little individual impact the total effect is substantial. It follows then that all small parcels should not be judged on a single criteria.	117	20. Page 166 of the DEIS states: "Small tracts (less than 100 acres) would not provide sufficient big game habitat if surrounded by developed private land." We agree with your comment, and in the FEIS we have included in our analysis all parcels of public land in disposal zones that provide winter range and other wildlife values, regardless of size.
21. I also oppose the sale of any resource lands along the Eagle River. Public access is a problem along much of the river and with increased development the problem will probably become worse in the future. Any acreage which allows continued public access to the river must be retained in public ownership. Although the problem along the Colorado River does not appear as critical, care must be taken to provide continued public access and boat landing sites.	117	21. We recognize the importance of public access to the Colorado and Eagle Rivers. Under the Proposed Plan (FEIS), all points of access to the Colorado and Eagle Rivers have been placed in retention zones (see Map 3-14, FEIS).

Table 7-3. Comments and Responses—Continued

Comment	Raised By (index number)	Response
22. Land Tenure Adjustments, Map 3-34—The BLM has identified portions of Secs. 19, 20, 21, and 28, T. 5 S., R. 83 W., and Sec. 24, T. 5 S., R. 84 W., as priority lands suitable for disposal by exchange. Public access to National Forest land in the Salt Creek area has been a serious problem over the last two years, particularly during hunting season. The BLM land in question may be needed in the future for a new road to provide access to the Forest. If these lands are exchanged, a provision should be made to insure the Government can obtain a road right-of-way, if needed, at some future date.	118	22. The parcel of public land which you have identified, in Secs. 19, 20, 21 and 28 of T. 5 S., R. 83 W., and Sec. 24 of T. 5 S., R. 84 W., 6th P.M., is within a retention zone under the Proposed Plan (see Map 3-14, FEIS).
23. What is your rationale for classifying some lands designated as "crucial" winter range for disposal rather than retention? Your wildlife objectives could seemingly be better met by emphasizing that by helping agriculture you help wildlife while noting that mountain subdivisions hurt both wildlife and an agriculture based economy (particularly the local livestock industry that is a National Forest objective to assist). I recommend BLM lands that lie to the west of Basalt Mountain be designated for disposal. The method I have in mind is either exchange or boundary adustment. As you know, this land has been proposed for National Forest ownership and/or management for many years and it would be in the public's best interest for one agency to manage the area's resources (primarily range and wildlife). I do not think it wise to preclude this rational management option by failing to designate it as suitable for disposal.	118	23. The parcels of public land which you have identified, in Secs. 11, 14, 23, 26, and 35 of T. 7 S., R. 87 W., 6th P.M., are within a cooperative management-retention zone. As stated on page 38 of the DEIS, "public land identified for cooperative management would be more efficiently managed in conjunction with other governmental agencies." This designation does not preclude either exchange or boundary adjustment with another federal agency. See also response to comment 5.

24. The Board does have a specific concern with the suggested policy to encourage disposal of Public Lands. The Board is concerned both with some of the lands designated for disposal and the method of disposal. The major concern is that lands with grazing rights currently on them be encouraged to remain in agricultural uses and that lands with limited development potential not be given false expectations for the amount of development that might be allowed on them. The Board would like to work closely with the Bureau of Land Management in further developments with the land disposal program.	133	24. The overall impact to ranch operations in the resource area as a result of the Proposed Plan's (FEIS) land tenure adjustments is insignificant. Recognizing that the loss of grazing privileges may have adverse impacts to individual ranching operations, we have reduced the animal-unit months (AUMs) lost through transfer out of federal ownership from 2,268 AUMs under the Preferred Alternative (DEIS) to 1,756 AUMs in the Proposed Plan (see Map 3-14, FEIS). In addition, Section 402(g) of FLPMA states: "Whenever a permit or lease for grazing domestic livestock is canceled in whole or in part, in order to devote the lands covered by the permit or lease to another public purpose, including disposal, the permittee or lessee shall receive from the United States a reasonable compensation for the adjusted value, to be determined by the Secretary concerned, of his interest in authorized permanent improvements placed or constructed by the permittee or lessee on lands covered by such permit or lease, but not to exceed the fair market value of the terminated portion of the permittee's or lessee's interest therein. Except in cases of emergency, no permit or lease shall be canceled under this subsection without two years' prior notification." Once the lands are transferred out of federal ownership, it will be the county's discretion to determine whether the lands remain in agricultural use. The BLM will work closely with the counties to ensure that all potential purchasers are aware of limitations that may be placed by the county upon the use of any tract of land in private ownership. The BLM will continue to work closely with the counties in determining priorities for the land tenure adjustment program.
25. Adverse impacts on grazing could also be reduced by adopting the RPA's land disposal projections. According to the RPA's land disposal program, only 1,026 AUMs will be lost, rather than 2,268 AUMs if the PA's land disposal plans are instituted.	125, 100	25. See response to comment 24.
26. Land prices will go down. Federal payments to the county will be lowered. The increased private land base will increase administrative costs to local jurisdictions.	125	26. Payment in lieu of taxes (PILT) to the counties would not be significantly affected. Further, land that is transferred into private ownership is subject to taxation by the county in which it is located. It is not anticipated that the transfer of ownership of 15,500 acres, distributed over the life of the plan, would have any significant impact on county administrative costs.
27. Manageability is a commendable goal of the land disposal program, but it is better accomplished by exchanges than by land sales, so that the BLM can maintain its overall resource base. Wildlife habitat and other natural resources are better managed by the BLM than by the private sector, a fact apparently agreed to, even by some local governments (p. 39). The public interest, both local and national, is ill served by this blatant give-away of a natural heritage belonging to all Americans. Regarding exchanges, we recommend that lands with significant resource values be identified specifically for exchange, rather than for sale. Also, we would like to have more information on the larger, more valuable parcels up for disposal in order to comment on their disposition.	125	27. See response to comment 2.

Table 7-3. Comments and Responses—Continued

Comment	Raised By (index number)	Response
28. More information should be made available for public review on detailed aspects of the program, such as fair market value, who gets the first chance to buy tracts, and whether state or local approval will be required for sale.	125	28. All information used in the development of the Proposed Plan (FEIS) is available in the Glenwood Springs Resource Area office for public review. Site-specific information such as appraised fair market value, preference rights, and applicable county zoning regulations will be collected and analyzed during implementation of the plan and will be available for public review prior to any disposal actions.
29. The land disposal program would be better framed as the Land Acquisition Program. Its focus should not be the identification of lands for disposal, but of lands whose acquisition (by exchange) would improve the consolidation and manageability of resource-rich BLM lands. Local residents and land owners should look twice at a program which will lower land values and threaten an important economic resource in order to draw more dollars into the insatiable Federal deficit.	125	29. We will continue to be interested in acquisition and exchange proposals that enable us to consolidate and improve the manageability of public lands within retention zones. However, acquisition of private land implies an interest on the behalf of the private landowner to dispose of his/her land. We will consider any proposals for acquisition of private land in retention zones when initiated by the private landowner.
30. Worst of all, 14,730 acres (or 6 percent) of the RA's crucial big game winter range will be lost. Along with loss of habitat due to private land development, this will cause a 21 percent decline in big game, and a corresponding decrease in hunting revenue critical to the local economy.	125	30. See response to comment 5.

31. Nothing in this section justifies land sales for the purpose of balancing the federal budget. Only overriding public interest can justify either the exchange or sale of public lands. Is the sale of up to 23,000 acres of public land in the Glenwood Springs Resource Area, in order to bolster the Federal Treasury by an infinitesimal fraction of one percent, to be considered in the public interest? The public objectives to be served by land sales and exchanges, as defined by FLPMA, have to do not with balancing the federal budget, but with economic, recreational, and scenic advantages primarily to local communities. These are the very assets which the BLM's land disposal program most jeopardizes.	125	31. Both local and national objectives were considered in the determining of which land would be retained and which land would be identified for disposal. Those lands identified for disposal meet the criteria for disposal as outlined in Sections 203 and 206 of FLPMA. Section 203 states, in part: "A tract of the public lands may be sold under this Act where, as a result of land use planning required under Section 202 of the Act, the Secretary determines that the sale of such tract meets the following disposal criteria: (1) such tract because of its location or other characteristics is difficult and uneconomic to manage as part of the public lands, and is not suitable for management by another Federal department or agency; or... (3) disposal of such tract will serve important public objectives, including but not limited to, expansion of communities and economic development, which cannot be achieved prudently or feasibly on land other than public land and which outweigh other public objectives and values, including, but not limited to, recreation and scenic values, which would be served by maintaining such tract in Federal ownership." Section 206 states, in part: "A tract of public land or interests therein may be disposed of by exchange by the Secretary under this Act where the Secretary concerned determines that the public interest will be well served by making that exchange: Provided, that when considering public interest the Secretary concerned shall give full consideration to better Federal land management and the needs of State and local people, including needs for lands for the economy, community expansion, recreation areas, food, fiber, minerals, and fish and wildlife and the Secretary concerned finds that the values and the objectives which Federal lands or interests to be conveyed may serve if retained in Federal ownership are not more than the values of the non-Federal lands or interests and the public objectives they could serve if acquired."
32. It is strongly recommended that any sales of these lands be conducted on a non-competitive basis, as provided for in the Federal Land Policy and Management Act, Title II, Section 203, Paragraph (f). Therefore, the Secretary should give consideration to the current, qualifying policy for potential purchasers where the above criteria is met.	126	32. Under Section 203(f) of FLPMA, the Secretary may give consideration to the state and to local governments, as well as any other person, in order to recognize equitable considerations or public policies. However, current BLM policy emphasizes that the disposal of public lands should occur through public sale under competitive bidding procedures if the criteria of Section 203 of FLPMA are to be met.

Table 7-3. Comments and Responses—Continued

Comment	Raised By (index number)	Response
33. It is further recommended that no mineral reservation be made on the small isolated parcels of public lands offered for sale under the Land Tenure Adjustments. Most of the isolated parcels recommended for sale are (1) of such small acreage that economic development of minerals would be impractical and (2) the reservation of mineral rights by the U.S.A. is interfering with appropriate non-mineral development of the land and that such development is a more beneficial use of the land than mineral development. Therefore, to reserve minerals to the U.S.A., where minerals are not known to exist, would conflict with oil shale development.	126	33. Section 209(a)(b) of FLPMA states specifically the conditions under which conveyance of the mineral estate may take place. In part, Section 209 states: "(a) All conveyances of title issued by the Secretary, shall reserve to the United States all minerals in the lands, the minerals may be conveyed together with the surface to the prospective surface owner as provided in subsection (b). "(b)(1) The Secretary, after consultation with the appropriate department or agency head, may convey mineral interests owned by the United States where the surface is or will be in non-Federal ownership, if he finds (1) that there are no known mineral values on the land, or (2) that the reservation of the mineral rights in the United States is interferring with or precluding appropriate non-mineral development of the land and that such development is a more beneficial use of the land than mineral development. "(b)(2) Conveyance of mineral interests pursuant to this section shall be made only to the existing or proposed record owner of the surface, upon payment of administrative costs and the fair market value of the interests being conveyed."
34. The requested lands are classified in the RMP Draft EIS as retention land. So long as this designation has no adverse effect or does not jeopardize Mobil's ability to acquire these rights-of-way, we do not oppose the proposed retention classification. If the proposed retention classification would adversely affect the pending right-of-way application, we request BLM to consider reclassification of these lands for disposal. We also would hope that retention classification would not necessarily preclude future consideration of these lands for disposal should such classification serve the best interests of BLM, the public, and Mobil.	92	34. Rights-of-way will continue to be authorized on public land retained in public ownership. The proposed retention zone designation will have no effect upon BLM's ability to grant rights-of-way across public land. However, the issuance of a right-of-way is a discretionary action reserved to the authorized officer of the BLM.
35. We believe that the northeast quarter (NE/4) of Section 24 (T6S, R96W) is incorrectly mapped and documented in the BLM office. Current USGS topographic and BLM mineral title plats erroneously reflect this tract as part of the Naval Oil Shale Reserve.	92	35. Currently, our records show this parcel of land to be in public ownership under the administration of the Department of Energy. We are presently researching our records to resolve the question of ownership.
36. Land Tenure Adjustments—The public lands around Carbondale are important in providing open space and recreational areas near the town. If parcels are available for sale, Carbondale would like to have advance notice and be able to participate as possible buyers. The Economic Development Alternative would not be supported and preference should be made for the Resource Protection Alternative.	112	36. With the exception of isolated and small parcels, public land in the vicinity of Carbondale has been identified for retention under the Proposed Plan (FEIS). Carbondale and all local governments will be provided with advance notice of any sale of public land in their vicinity and will be welcome to participate in any sale offered through competitive bidding procedures.

37. Therefore, it is strongly recommended that, upon expiration of the current federal oil and gas leases located in the upper Parachute Creek valleys, the Secretary discontinue the simultaneous lottery filings. It is further recommended that the Secretary convey the mineral interest to the surface owner, in acccordance with the policy as provided in the Federal Land Policy and Management Act, Section 209.	126	37. The Proposed Plan (FEIS), recommends that these areas remain open for oil and gas leasing. This is consistent with current BLM policies. Further, the uncertainty of oil shale development at this time does not indicate an immediate conflict between oil and gas exploration and oil shale development. The terms and conditions under which the mineral estate may be conveyed to the surface owner are outlined in Section 209 of FLPMA. Generally, where there is the potential for mineral estate development and where there are no irreconcilable conflicts with a higher and better use of the surface estate, the mineral estate will be retained in federal ownership.
Off-Road Vehicle Management		
1. Off-Road Vehicle Management should recognize the legitimate need of agricultural and mineral requirements as opposed to recreational requirements. Standard restrictions on all traffic is not proper. Classifications or other provisions for the legitimate access needs of agriculture and mineral resources should be made.	44	1. Vehicle use is vehicle use whether it is recreational, agricultural, or mineral in nature. Since off-road vehicle (ORV) restrictions or closures are implemented to protect resource values from damage by unrestricted vehicle use, it is proper to impose standard restrictions. However, some exceptions generally apply as footnoted in Table 3-16, Chapter 3, FEIS.
2. The Committee concurs with the proposed alterative, except for plans to close the Sweetwater trail to the Hack Lake area to motorized use. The trail is currently open to motorized use and the Committee felt that there hasn't been any damage or other reason to close it. A motion was passed that "trail numbers 2607 and 2032 to Hack Lake remain open to motorized use with an off-road limitation."	109	2. The portion of trail number 2032 on national forest land is presently closed (see the 1981 Travel Map for the White River National Forest). Resource damage is not the only reason to close or limit ORV use, The area has been identified for management as a semi-primitive non-motorized recreation opportunity spectrum (ROS) class; therefore, allowing motorized use would be inconsistent with management objectives for that class.
3. Off-Road Vehicle Management—The Resource Protection Alternative or the Preferred Alternative should be retained.	112	3. ORV recommendations under the Proposed Plan (FEIS) are the same as those under the Preferred Alternative (DEIS) except for the ORV recommendation made near Sunlight Peak to provide consistency with U. S. Forest Service ORV designations. However, the change does not affect the intent of the recommendation. See Chapter 3, Description of the Proposed Plan, and Map 3-15 (FEIS).
4. Adjacent National Forest land at Sweetwater is closed yearlong to motorized travel off Forest roads except trail vehicles operating on Forest trails and snowmobiles operating on snow. Adjacent National Forest land at Deep Creek has no ORV restrictions. I feel that ORV restrictions on adjacent areas of National Forest and BLM land should be the same (under most circumstances) to provide a logical travel management policy to the public.	118	4. ORV designations on adjacent areas of national forest and public lands should be the same as long as the management objectives of both agencies can be met. The ORV closures on the public land portions of the Hack Lake and Deep Creek areas are considered necessary to protect the identified resource values and to be consistent with BLM ROS management objectives.
5. On your map 3-37 you show the area near Sunlight Peak in blue which indicates the area is classified as "ORV Use Limited to Existing Roads and Trails..." I recommend that you change this to green indicating "ORV Use limited to Designated Roads and Trails..." This designation would conform to our ORV use in the Fourmile Park. At present this land is Open to ORV year-round which is in conflict with our management. On page 40 you state that the White River National Forest ORV plans are unknown. Our travel map and regulations have been in effect for over a decade, and I recommend that you consult that map for our current management. Local District Rangers can be contacted for changes that may occur in the Forest Plan.	118	5. The ORV limitation near Sunlight Peak has been changed to the "designated roads and trails" category to be more consistent with the designation on the national forest. The 1981 U. S. Forest Service Travel Map is used as the reference for the consistency section in the FEIS.

Table 7-3. Comments and Responses—Continued

Comment	Raised By (index number)	Response
6. Also on Map 3-37 and page 41 you are proposing to restrict ORV use in certain areas from 5/7 to 12/31 (areas coded "5"). Why? What value or resource will this protect? I could not find an explanation for this seasonal restriction and wonder what it is.	118	6. As shown on Map 3-37 (DEIS), the limitation is to reduce stress on animals on big game winter range. The overall impact of ORV limitations on terrestrial wildlife is discussed on page 166 of the DEIS.
Transportation Management		
1. Map 3-41 indicates that a new road may be constructed into the Thompson Creek NEA. I don't think BLM has the money or manpower to clean up the road after it turns into a high school drinking spot.	18	1. Access to this area is proposed to benefit BLM management and provide public access to the public land in this area. No new roads would be constructed. Only maintenance of the existing road would occur.
2. BLM should work closely with Garfield County on reconciling management objectives for the Colorado River corridor. As noted in the RMP, the County zoned this corridor industrial to accommodate sand and gravel operations. BLM proposes to allow these operations only if they are consistent with protection of important riparian wildlife and recreational values. This conflict in management of objectives should be resolved, with values balanced by recognizing the importance of both tourism and industry to the region.	90	2. The Proposed Plan (FEIS) identifies the public land in the Colorado River corridor as an area of critical environmental concern. The management prescription emphasizes maintenance of habitat for bald eagles, blue herons, riparian and recreational values. The prescription also provides for mining of gravel on public land so long as extraction does not unnecessarily impact the values identified in the area. This is not inconsistent with the Garfield County Master Plan.
3. Objection to opening Onion Ridge road to the public. In the past, I have provided access to BLM and Forest Service, and I would continue to provide access to them in the future.	93	3. The route for the Onion Ridge access has been relocated further north (see Map 3-16). However, exact locations are not shown on the map. A route analysis would be completed prior to final road location.
4. We generally recommend that all roads to timber sales be closed to the public after the sales are completed.	109	4. In areas where wildlife or other resource values warrant, temporary roads could be closed after harvesting operations were completed. Activity plans and environmental assessments developed prior to a timber sale would analyze resource values and impacts and would determine on a case-by-case basis whether roads for timber management would need to be closed to protect sensitive resource values.
5. Transportation Management—Carbondale would like to see consideration given to possible public access to public lands on Red Hill. The Red Hill area would be a good future site for some passive recreational uses.	112	5. Access to Red Hill is recommended in the Proposed Plan (see Map 3-16, FEIS). In the DEIS, access is shown from the north. The actual access route would be chosen upon completion of a route analysis.
6. Development of logging roads on Castle Peak will be a major expense, both in terms of dollars and environmental impact, with little foreseeable return. The Forest Service released Castle Peak to the BLM due, in part, to its remoteness. BLM appeared to close the Castle Peak development option when it failed to protest the closing of the Burns Road.	117	6. The BLM strongly opposed the closing of the Eiby Creek Road by Eagle County because the road was important to the management of public land in the Castle Peak area.
7. I favor your proposal to try to obtain easements for roads and trails. In particular, I believe the highest priority in my area is the trail access easement up Thompson Creek, 5 miles south of Carbondale. (See Map 3-41).	118, 18	7. This proposal has been included as part of the Proposed Plan (FEIS).

8. We oppose the acquisition of access into the Castle Peak area. We feel this would cause resource degradation such as vandalism, littering, and off-road vehicle damage caused by increased use. Unless those impacts can be avoided, we feel the area should be left as it is.	130, 110, 105	8. The acquisition of access is necessary to implement the recommendations proposed for the area. These include forest management, wildlife and livestock vegetation manipulations, and increased public access for recreational purposes. We have restricted off-road vehicle (ORV) use to *designated roads and trails* and feel this would help contain ORV damage. The potential exists for increased littering, vandalism, and ORV damage, but we feel this would be offset by the benefits derived from the above mentioned proposals.
9. Since the proposed route will intersect and conflict with the location of UOC's shale oil operation, and therefore will present hazardous conditions for public access, it is strongly recommended that the above proposed development be eliminated.	126, 118	9. This proposal has not been included as part of the Proposed Plan (FEIS).
10. Map 3-41 indicates that a new road may be constructed into the Thompson Creek NEA. Is this accurate? I foresee management problems occurring if this is done and wonder if it was a map error and should have been a trail.	118	10. Map 3-41 (DEIS) was not in error. The road shown is an existing jeep trail. We have changed the Proposed Plan (FEIS) so that this road does not go through as a loop road. Consequently, 43 miles of additional access would be reduced to 41 miles to reflect this change. Only the existing road is indicated for additional easement acquisition from the north.
Utility and Communication Facility Management 1. We strongly urge you to take your initial fine planning effort a step further and identify and designate existing utility corridors. Also, it is imperative that planning "windows" and critical corridor segments be identified in the RMP so that other management decisions do not inadvertantly constrict or preclude future sitings of utility and communication facilities.	40	1. Section 503 of the *Federal Land Policy and Management Act of 1976* reserves the right to designate right-of-way corridors to the Secretary of the Interior. This policy is elaborated upon in the BLM Manual in Section 2801.11A, which states that BLM may designate corridors through the planning process or through the *National Environmental Policy Act* process, where appropriate. Linear corridor designations and planning windows were evaluated in the planning process, and it was felt that their use would unnecessarily restrict the location of utilities in the Glenwood Springs Resource Area. Because of the broken, disjointed pattern of public land, designation of corridors would lead to a de facto zoning of adjacent and interspersed private lands. In addition, designation of corridors on public land would severely restrict the options available to local decisionmakers and private landowners in their determination of suitable locations on adjacent private lands. Lastly, it was felt that designation of corridors would imply approval of all utilities proposed within the corridor, which is not the case. There are no heavy concentration of avoidance areas in the Glenwood Springs Resource Area. Therefore, identification of planning windows and critical corridor segments was felt to be unnecessary. The approach taken in the Utility and Communication Facility section of the Proposed Plan (FEIS) provides greater flexibility for utility companies, BLM, and local decision makers in determining suitable locations for utilities. This approach was selected so that management decisions based on the plan would not inadvertantly constrict or preclude future sitings of utility and communication facilities.
2. We request that the unsuitable designations for the bald eagle/blue heron high-use areas and the recreation sites (existing and proposed) be changed to "sensitive."	40	2. In the Proposed Plan, bald eagle/blue heron high-use areas and recreation sites are designated as sensitive resource values. Impacts to sensitive resources would need to be mitigated before a proposed utility or communication site could be located in a sensitive zone. The FEIS has been changed (see Map 3-17, FEIS).

Table 7-3. Comments and Responses—Continued

Comment	Raised By (index number)	Response
3. It is suggested that a new section be included under this heading and titled: Utility and Communication Facilities Assumptions. This new section could discuss the treatment of existing facilities (i.e., designation of existing corridors); the need for identifying new corridors, critical corridor segments, and planning windows; and criteria and guidelines.	40	3. Adequate provision for utility and communication facilities is made by addressing utility and communication facility management as a component of the plan (see Chap. 3 (FEIS), Description of the Proposed Plan, Utility and Communication Facility Management).
4. Impacts from utility and communication facilities on other resource values are treated inconsistently in each management alternative discussion. For example, under Continuation of Current Management Alternative Impacts, the impacts from utility and communication facilities management are only discussed relative to critical watershed areas and no other resources. Under Resource Protection Alternative Impacts, however, there is no mention of utility and communication facilities impacts on critical watershed areas but there is on soils, wildlife, grazing, recreation, and wilderness resources. Similar inconsistencies can be found in the Economic Development and Preferred Alternative scenarios.	40	4. Impacts to critical watershed areas as a result of the Resource Protection Alternative for utility and communication facilities are identified on page 111 (DEIS) in the third paragraph. The heading "Impacts from Utility and Communication Facility Management" was inadvertantly left out. Impacts are only discussed where they could be quantified as a result of implementation of the management alternative. Impacts resulting from utility and communication facilities under the Continuation of Current Management Alternative are not quantifiable and can only be evaluated on a case-by-case basis.
5. We suggest that a new section be included in each of the four management alternative impacts discussions. These new sections would be titled "Impacts on Utility and Communication Facilities" and would discuss the impacts on utility corridor planning from other proposed management actions such as livestock grazing, watershed management, aquatic and terrestrial habitat management, wilderness resource management, etc.	40	5. A discussion of impacts to utility and communication companies that would occur as a result of implementation of the plan has been included under Impacts to Social and Economic Conditions, Chaper 5, of the FEIS.
6. It is recommended that a new section be included in Appendix A entitled Utility and Communication Facilities. This section could list some of the proposed policies and guidelines for identifying and designating existing and future corridors. Siting criteria could also be listed.	40	6. Criteria for identifying sensitive, suitable, and unsuitable zones are identified in the Table 3-26 (DEIS) and Table 3-18 (FEIS). BLM Manual 2801 and the Code of Federal Regulations, Parts 2800 and 2850, provide further guidance and policy interpretation.
7. Designations have again been made upon private land. It is unacceptable for the BLM to visit the public's needs upon private landowners rights.	44	7. Designations have not been placed on private land. In all alternatives (DEIS) and under the Proposed Plan (FEIS), designations along the Colorado River apply only to public land within the outlined area. Designations in all other areas are shown only on public land.
8. Some designations do not correlate well with existing approved use. Raptor concentration and peregrine falcon introduction near Crater and Deep Creek; sensitive zone designation on Rock Creek and Egeria Creek near Crater; primitive and natural values on Deep Creek, to mention a few. With all the raptor concentration areas shown, why are we in need of additional introduction? These maps now indicate a plethora of native habitat sites which become unsuitable for other uses. The Colorado Division of Wildlife would lead us to believe that coyotes are an endangered species. I suggest a more sincere approach to Terrestrial Habitat Management.	44	8. Existing authorized uses are permitted within designated zones. Raptor concentration areas and peregrine falcon introduction areas are identified as sensitive areas for location of utilities in the Proposed Plan. The FEIS has been changed (see Map 3-17). A sensitive designation would not preclude other uses; however, it identifies a sensitive resource that might be impacted by construction of a utility or communication facility. A utility or communication facility could be located within a sensitive zone if impacts to sensitive resources could be mitigated.

9. We disagree with the proposed designation of areas in Cottonwood Gulch (T. 6 S., R. 95 W., Sections 15, 19, 20, 22, and 23) and Hayes Gulch (T. 6 S., R. 96 W., Section 24) as unsuitable for development of utility and communication facilities in the Economic Development and Resource Protection Alternatives.	92	9. The proposed unsuitable designation of areas in Cottonwood Gulch and Hayes Gulch is consistent with the criteria developed for the Economic Development and Resource Protection Alternatives (DEIS). These areas are designated as sensitive under the Proposed Plan (FEIS).
10. The BLM has identified the above areas as potential peregrine falcon introduction areas and/or raptor concentration areas. As part of the Parachute Shale Oil Project, Mobil plans to build an oil shale retorting and shale oil upgrading facility on the Roan Plateau directly above the cliff areas proposed for protection. Our preferred design alternative calls for an access road and utility corridor through Cottonwood Gulch and a powerline corridor through Hayes Gulch. This corridor will be evaluated by BLM as part of the Parachute Shale Oil Project just being initiated (Mobil-Pacific EIS). As previously stated in a letter dated May 26, 1982, studies performed by Dr. Allen Crockett, Western Resource Development Corporation, do not indicate the areas are unique or sensitive habitats. The degree of development with existing or planned in adjacent portions of the Colorado River Valley or the Roan Plateau suggests that a number of other suitable areas throughout the Glenwood Springs Resource Area would provide better habitat and be more appropriate for protection. The potential peregrine falcon introduction areas and raptor concentration areas in Cottonwood and Hayes Gulches are treated inconsistently in the various alternatives. Logically, the Economic Development Alternative should not be more restrictive to resource development than other alternatives. Therefore, to be consistent with the Preferred Alternative, potential peregrine falcon introduction areas and raptor concentration areas in Cottonwood and Hayes Gulches designated as unsuitable for utility or communication facilities should be eliminated from the Economic Development Alternative.	92	10. Peregrine falcon introduction areas on the Naval Oil Shale Reserve were not identified in the Preferred Alternative (DEIS) or the Proposed Plan (FEIS). However, the proposed peregrine falcon introduction areas do meet the criteria for inclusion in unsuitable zones in the Resource Protection and Economic Development Alternatives (DEIS).
11. We also feel the "sensitive" raptor habitat designation of an area near Main Elk Creek (T. 5 S., R. 91 W., Section 15) in the Economic Development and Resource Protection Alternatives is improper. Dr. Crockett's wildlife studies in the area do not lead us to believe the area contains unique or "sensitive" raptor habitat. Similar habitat is found throughout the general vicinity. To be consistent with the Preferred Alternative, the "sensitive " designation should be removed from the other alternatives.	92	11. We are aware of one redtail hawk nest at the mouth of Main Elk Creek. We agree that one site is not worthy of the sensitive designation, as displayed in the Preferred Alternative (DEIS). However, activity that might impact the site would be addressed on a site-specific basis at the time a proposal were received.
12. Utility and Communication Facilities—The exposed areas in the valley bottoms and on the surrounding benches would and should be considered unsuitable for above ground construction of utilities. Any utilities construction underground should be completed in a manner that minimizes scarring of terrain and vegetation. All utility sites should be completely rehabilitated. Public lands which are removed from immediate viewsheds may be appropriate for construction of facilities. These sites should not allow skylining of structures, should utilize terrain and vegetation to hide structures, should not allow for vegetation clearcutting and should involve careful site review. Significant problems can be avoided with proper preapplication conference review with all impacted entities.	112	12. Above-ground facilities, including overhead telephone lines, electric distribution lines, and communication sites already exist on many low-lying public and private lands. Areas of high visual sensitivity, such as exposed areas in valleys, contribute to a sensitive designation as shown in Table 3-26 (p. 43, DEIS). Proposed utility or communication sites in this sensitive zone, as shown on Map 3-44 of the DEIS and Map 3-17 of the FEIS, must reduce visual impacts to a level compatible with the surrounding landscape. Mitigation measures may include avoiding of skylining structures, use of masking characteristics of terrain and vegetation, special construction techniques, and proper evaluation of site location through preapplication conference and field review.

Table 7-3. Comments and Responses—Continued

Comment	Raised By (index number)	Response
13. In your response to this letter please answer the following questions: why has an area that is highly developed and which contains large numbers and diverse types of utilities and communication facilities been designated as "temporarily unsuitable (pending cadastral survey)" under the preferred resource management alternative for utilities and communication facilities? Of the Bureau of Land Management and the Federal Energy Regulatory Commission, which agency has jurisdiction over the location of hydroelectric power plants or other utilities in the Project area—excluding indicated BLM lands (see attached map)? Why was the preferred designation of the project area as temporarily unsuitable for utilities not identified by your agency as one of the particular issues to be addressed by my company under the Preliminary Permit?	131	13. Public lands along the Colorado River from Newcastle to DeBeque provide important riparian habitat and important habitat for blue herons and wintering bald eagles. It is not our intent to zone private land in this corridor as unsuitable, sensitive, temporarily unsuitable, or suitable. The designation applies to public land only. Ownership of some of this land is still in question, thus the designation "temporarily unsuitable pending cadastral survey" was applied in the Resource Protection, Economic Development, and Preferred Alternatives (DEIS). However, in the Proposed Plan (FEIS), public land within this zone was identified as sensitive because we felt that utilities might be compatible with these resources if impacts could be mitigated. The FEIS has been changed (see Map 3-17). The BLM would evaluate proposals on public land in this area on a case-by-case basis and issue or deny authorization based on the merits of the proposal. The Federal Energy Regulatory Commission is responsible for evaluating and licensing hydroelectric power projects under the authority of the *Federal Water Power Act* and is primarily concerned with the orderly and coordinated development and use of water resources and hydroelectric power. Both agencies have concurrent regulatory responsibilities and jurisdiction over the location of hydroelectric power plants on public land. At the time that the DEIS was issued, we did not feel it was appropriate to advise the Federal Energy Regulatory Commission of possible alternatives and preliminary recommendations until there had been an opportunity for public review.
14. Your designation on map 3-44 and page 43, Table 3-26 for the Sunlight Peak area as being "Sensitive" to utilities and communication facilities, concerns me. Although the area may be "sensitive" from a visual perspective, I am concerned that your classification may force utility and communications companies to make application on the Forest merely because of your restrictive classification, rather than look at the best alternative. As you know, a large electronics site already exists on Sunlight Peak, including facilities on BLM land that is now designated "sensitive". This may be a small point, but I believe you understand my concern.	118	14. The FEIS has been changed (see Chap. 3, Map 3-17). The Sunlight Peak communication site has been placed in a suitable zone in the Proposed Plan.
Fire Management 1. Lastly, Castle Peak area does contain much downed timber. Harvesting to rid the area of fire hazard is one method, but permiting a natural fire would provide a type of forage improvement without spending money for controlled burns or chainings. A certain type of fire would promote successional growth and benefit wildlife. This is not to say that a fire is desired, but if it were to occur, benefits would be forthcoming.	29	1. A natural fire occurring in the beetle-killed area on Castle Peak could very easily destroy the entire stand of timber. Active management to reduce the fuel loading would reduce the possibility of this occurring.

2. Another conflict identified by the BLM for Castle Peak is the fire hazard, which is presumed to be reduced by timber cutting. I'm not an expert forester, but I've seen timber cuts before and there's a lot of slash up from the ground. Unless you remove only the log timber, of course, there's dead timber lying about, which also poses a fire hazard; so unless you remove everything, you haven't reduced the fire hazard that much as far as I can tell.	64	2. The area would be opened up for the harvest of dead and down timber only, thus reducing the accumulation of fuels. In addition, by removing standing dead timber, the chance of lightning-caused fires would be greatly reduced. Heavy slash and fuel buildups, either normally or from harvesting, can be effectively reduced through fuelwood sales, mechanical treatments such as chipping or roller-chopping, or broadcast burning.
3. We believe that the primitive and natural qualities of the Castle Peak area dictate that BLM put this area into the Fire Management or Fire Suppression categories, not Fire Exclusion. Fire is a natural part of any undisturbed ecosystem, and prescribed fires at appropriate times might reduce the fuel load—timbering, unless the slash and downed timber is removed, will not.	76	3. Castle Peak has been changed to a fire management zone under the Proposed Plan (FEIS) for the reasons you stated and to provide greater flexibility in the management of the timber in the Castle Peak area.
General Management		
1. In your analysis you make no mention or analysis of critical threshhold elements of the plan which must not be exceeded for certain resources.	20, 124	1. For many resources there was not sufficient information to set specific critical threshhold limits. We defined threshholds as the level where recommendations resulted in unacceptable impacts. In most cases, these limits were hard to define at the level of detail of the recommendations. Several threshhold levels are discussed in a general sense in Chapter 5 on pages 83 to 87 (DEIS). In CFR 43, 1601.5, it is inferred that threshhold levels are factors which may be included but are not required. It should also be recognized that further site-specific planning may identify more specific thresholds.
2. There is also very little evidence that the BLM actually analyzed the impacts of its plan on adjacent vital resources.	20	2. We have expanded this section in the FEIS, especially relative to consistency with counties, cities, and other agency plans. Impact on adjacent lands was considered but in most cases was insignificant and therefore was not discussed in the analysis of the document. The majority of the off-site impacts were related to social and economic impacts in terms of income and employment.
3. You do not include your planning criteria which was used in the documents preparation.	20, 124	3. We have included a summary of the planning criteria in Chapter 2 of this FEIS.
4. The document gives little information as to the extent or reliability of the inventory data on which the plan was based.	20, 124	4. To reduce its size, we included only information in the DEIS that we felt was essential to the review of the document. Our inventory summaries which include an analysis of extent and, in most cases, the reliability are available for review in the Glenwood Springs Resource Area office.
5. The plan gives no plan for monitoring or evaluating the plan's implementation.	20, 124	5. Monitoring and evaluation plans will be developed in the final resource management plan and published about October 1, 1983. These items are discussed in a general manner on page 3 of the DEIS and in more detail in the FEIS, Chapter 3, How the Plan will be Implemented.
6. There is little evidence in the plan that BLM used resource demand forecasts in devising the alternatives.	20, 124	6. Although it may not be readily apparent in the document, demand forecasts were an important consideration in both the development of alternatives and the analysis of impacts. The document length was a prime concern. Demand information is expanded in the FEIS and is further discussed in the Existing Management Situation document available for review in the Glenwood Springs Resource Area office.

Table 7-3. Comments and Responses—Continued

Comment	Raised By (index number)	Response
7. The Resource Protection Alternative (RPA) contains several recommendations which directly conflict with the professed goal of this alternative—the protection of fragile and unique resources. As a result, the draft RPA fails to give an accurate picture of the optimal level of resource protection which could be attained.	124	7. Development-oriented recommendations were made in the Resource Protection Alternative (DEIS) where they did not conflict with the protection of fragile or unique resources. The Resource Protection Alternative was not intended to be protection only but to include a mix of management recommendations with an emphasis toward protection. The intent was to make the Resource Protection Alternative a reasonable and implementable alternative, not totally one sided and overly restrictive.
8. There is no implementation plan or schedule in the document.	20	8. An implementation schedule will be included in the final resource management plan, published about October 1, 1983. It was not felt necessary to include an implementation schedule until a plan was selected and approved.
9. The plan does not assess land which may be designated as unsuitable for coal mining.	20, 124	9. Coal Unsuitability was addressed in the DEIS. See pages 20, 21, and 195 (DEIS).
10. We feel that you should try to go back as much as possible to the old process, that as new programs are developed, as a major resource program is being developed, give the public the opportunity to review the environmental impact on those particular items rather than one big general impact statement for what you intend to do in the future.	20	10. The general level of detail in the resource management plan is designed to make the overall resource allocation decisions, provide a general framework for future management, and allow us to see the "big picture." This allows us to identify potential conflicts between resource programs early and resolve them. Because resource programs would likely have effects on several other resource programs, the general comprehensive analysis is felt a better means of studying resource recommendations. Site-specific plans by resource program will be developed to determine the specific implementation requirements for many of the proposals in the plan. This will include detailed analyses on engineering, specific locations, cost/benefit, and impacts.
11. And lastly, I think maybe the most critical part of this that we have any comments on is that it leaves the unclear relationship between this document and any future environmental analysis.	20	11. We have expanded the Implementation section in the FEIS. In many cases, site-specific activity plans will be developed for many resources. These site plans will include detailed engineering designs, cost-benefit analysis, specific locations, and more detailed environmental analysis of impacts.
12. We would like to see the local governments, including the towns, get the opportunity to comment on any proposed plans that you have.	20	12. There are currently provisions for local input on any plans we are proposing in the resource area. All towns and counties within the resource area have been and will continue to be invited to comment on BLM plans. Most counties within the resource area and BLM have specific planning agreements which provide for input, as appropriate, into each other's land use plans. Information concerning these plans is routinely published in newspapers, *Federal Register* notices, or in special publications such as newsletters.
13. There is no discussion of proposed budgets and their limitation on plan implementation.	44, 76	13. Available funding will be a limitation during plan implementation. However, recommendations were made based on resource needs and public demand. Therefore, each recommendation has a rationale that can be justified. Also, each recommendation has the potential to be implemented in an economically efficient fashion. A prioritization of the recommendations for each resource will occur prior to plan implementation to indicate what we will do each year.

14. What guidelines or definition was used to establish an area as suitable for designation as an ACEC?	44	14. A definition of areas of critical environmental concern (ACECs) is included in Chapter 3, Areas of Critical Environmental Conern, FEIS. Congress provided specific language in the *Federal Land Policy and Management Act of 1976* (FLPMA) for the identification and protection of ACECs. See FLPMA Section 103(a) for the definition of ACEC. See FLPMA Section 202(c)(3) for additional ACEC information and Senate Report 94-585.
15. Do the state agencies listed have the resources to adequately assist?	44	15. The budget situation may affect how these agencies can provide the needed support. It is not possible to predict the funding situations for state agencies; we can only show resource needs and identify needed coordination and assistance for implementation.
16. The capability unit boundaries are not valid.	44	16. Capability unit boundaries were based on both political and environmental criteria. The purpose was to assist the display of the analysis and resource data in a way that would be easier to understand. They served only as a smaller geographic breakdown on the resource area for display purposes.
17. A definition of public land holdings within the resource area should be shown on each map in order to better depict the impact or magnitude of management proposals.	44	17. Public land ownership has been added to all maps where possible in the FEIS.
18. This selection of an alternative bearing no resemblance to the identified alternatives is an obvious repudiation of the principles of NEPA, and is in gross violation of the requirement for full good faith consideration of the environment. In fact, the selection of an extreme no-wilderness alternative, contrary to the conclusions of every alternative considered in the DEIS, is a flaming example of utter disregard for wilderness.	59	18. There was no intent to make the Preferred Alternative resemble one of the other alternatives (DEIS). It was to be an alternative standing on its own. Nowhere in Council on Environmental Quality regulations on how to implement the *National Environmental Policy Act* does it say that the proposed action (Preferred Alternative) has to be one of the originally analyzed alternatives. We believe the development and analysis of the Preferred Alternative does give a "full good faith consideration of the environment."
19. I think that your proposal for the Glenwood Springs area focuses on short-term effects, that you're more concerned with the immediate political climate in which you operate and the possible, immediate local population's views than you are with the long-term effect of wilderness on this region of the country.	60	19. The analysis of demand for wilderness takes into account the projected long-term demands for wilderness just as it takes into account the long-term demands for timber and minerals. Short-term effects and concerns also play an important role.
20. The Preferred Alternative in many respects fails to strike the balance we are told it will between the RPA and EDA. In some cases the PA goes beyond the EPA in maximum production.	60, 125, 129	20. There was no intent to limit the Preferred Alternative (DEIS) in a manner that would place it, in all cases, between the Resource Protection and Economic Development Alternatives. It does on a resource wide and resource area wide basis generally strike a balance between the two management philosophies. See page 45 (DEIS) for an explanation of how the Preferred Alternative was selected.
21. The devastating effects of aspen and timber removal on thermal, hiding, and fawning cover are mentioned in a few brief paragraphs on pages 165 and 166. This material should be featured in the summary and in the description of the preferred alternative.	86	21. Because the impacts on cover were found to be somewhat insignificant overall and in the long term, it was not felt necessary to discuss them in the summary or the descriptions of alternatives (DEIS).

Table 7-3. Comments and Responses—Continued

Comment	Raised By (index number)	Response
22. Well, as we've heard, the timber values are, first of all, not particularly scarce at this time in Colorado. There are considerable other areas where these values can be developed that aren't wilderness; and the motorized recreation, we've heard conflicting testimony on that. And I think it's clear that what's needed is some study in the DEIS. That's what the environmental impact statement is supposed to do: study these things. And as far as I can see, there is no study on the availability of alternative motorized recreation in the statement.	69	22. The recommendations shown on the maps in the addendum indicate areas where timber or off-road vehicle opportunities may be found. It is felt this is an indication of availability of alternate opportunities.
23. I recommend that the "objective" section for ACECs (DEIS, 36) include examples for "natural systems or processes"; for example, protection of rare plants and protection of rare or exemplary ecosystems or geologic features.	83	23. The objective section for ACECs in Chapter 3 has been changed to give the example (see Chap. 3, Areas of Critical Environmental Concern, FEIS).
24. A major shortcoming of the DEIS is that there is no discussion of any anticipated mitigation efforts to reduce identified environmental impacts. The *National Environmental Policy Act* (NEPA) requires an EIS to "include appropriate mitigation measures not already included in the proposed action or alternatives" (Section 1502.14(f)). Section 1502.16(h) requires a discussion of the "means to mitigate adverse environmental impacts." Without inclusion of the means and measures needed to compensate for fish and wildlife losses associated with the proposal, the requirements of NEPA and the CEQ will not be fully met.	87	24. NEPA Handbook for BLM, Part C, states "Whenever possible mitigation should be included as an integral part of the alternatives (DM 4.10B) and not described as mitigation separate from the alternatives." Therefore, in the DEIS and FEIS, anything that could be done to reduce or eliminate impacts was designed into the alternatives. Thus, mitigation measures are "already included in proposed action(s) or alternative(s)." In addition, Appendix B lists stipulations that would be required as part of the Proposed Plan.
25. Therefore, we believe that the Final EIS must analyze the wilderness policy changes with regard to the area and the alternatives and allow a period for public comment.	124	25. All new wilderness policy changes were incorporated into the FEIS.
26. In addition to failing to meet the data and analysis requirements of 43 CFR 1601.5-2(b)(5), proposed management actions based on inadequate data such as increasing livestock allocations, vegetative manipulation, and timbering violate the regulatory requirement that when inventory data on other information is insufficient, BLM's decisions "shall preserve future resource options and avoid irreversible commitments to the degree practicable" 43 CFR 1601.5-2(5)(iv).	124	26. It was felt that we had sufficient data to make the decisions we did. Where assumptions were made to analyze impacts, monitoring will determine accuracy. Adjustments to recommendations will result following monitoring in instances where assumptions prove faulty. In some cases, site-specific analyses will be required to implement recommendations in the plan.
27. The proposed alternatives would result in many indirect effects which are not clearly added into the assessment of cumulative effects of such "intense management".	124	27. Unless an impact was considered significant, either by itself or in conjunction with other impacts, it was not included in the cumulative impact analysis. Those impacts considered significant were included in the analysis.
28. Because the Economic Development Alternative (EDA), Preferred Alternative (PA), and even the Resource Protection Alternative (RPA) all attempt to increase the area's capacity through high levels of "intense management" or manipulation, each alternative would result in significant cumulative adverse impacts on the area's "sensitive" environment (p. 82).	124	28. The intent in all alternatives is to protect the fragile environments when possible. For example, under all alternatives, critical watersheds near Glenwood Springs, Rifle, and New Castle and erosion hazard zones scattered throughout the resource area were all protected. If development means acceptable impacts, then it was believed that development should not be unnecessarily restricted.

29. While we do not advocate a magic number of alternatives, more are clearly necessary to achieve a range. By constricting the range and confusing the two choices presented, as this does, then devising an in-between preferred alternative, BLM has short-changed its own goals and failed to consider other reasonable alternatives. Three other possible and reasonable alternatives would be a true resource protection alternative, a low-cost alternative, and a minimum manipulation alternative.	124	29. The Preferred Alternative (DEIS) was not designed as an in-between alternative as displayed by those resources which fall outside the other three. Based on resource capabilities, it was felt that the alternatives as originally conceived did represent the real choices and tradeoffs in the resource area. Each was felt to be realistic and implementable. We also felt that four alternatives were sufficient to represent the various choices available.
30. We do think that greater consideration could be given to outlining the priority areas for BLM management for all of the resources concerned. We are particularly concerned with the protection of critical watersheds, water quality problem areas, and areas of critical environmental concern.	129	30. Priority areas for implementation will be identified in the final resource management plan published in October of 1983 (see How the Plan will be Implemented in this FEIS).

APPENDIXES

APPENDIX A

POSSIBLE MANAGEMENT ACTIONS

(See Draft Environmental Impact Statement)

APPENDIX B

REQUIRED MANAGEMENT STIPULATIONS

Appendix B (termed Project Design Features and Standard Operating Procedures in the DEIS) has been reprinted in the FEIS because of numerous changes made, especially in the Terrestrial Habitat section. These stipulations would be included in project designs and are considered standard operating procedures.

AIR QUALITY MANAGEMENT STIPULATIONS

1. Controlled burns and any other open burning would comply with BLM Manual Section 7723, ***Air Quality Maintenance Requirements***, to minimize air quality impacts from resulting particulates.
2. Necessary stipulations protecting air quality from development would be included in leases, rights-of-way, and other BLM use permits.
3. All applicable local, state, and federal air quality policies, regulations, and statutes would be followed.

AQUATIC AND RIPARIAN HABITAT STIPULATIONS

1. Surface-disturbing activities would be restricted in or near riparian areas.
2. Fences should be constructed to minimize impact to significant riparian and aquatic habitat.
3. Equipment would not be allowed to move up or down stream channels. Heavy equipment would cross streams only at designated or constructed crossings with culverts and bridges designed to allow upstream migration of fish.
4. Fire retardent would not be dropped within 100 yards of any wetland riparian area. Drops of retardent would be made parallel to and not across drainages.
5. Fire lines, angular or perpendicular to a drainage, would not be allowed within 300 feet of a drainage to reduce soil movement into the drainage system.
6. If visitor use caused adverse impacts on critical riparian habitat, the visitor use would be reduced until the vegetative conditions are restored.

TERRESTRIAL HABITAT STIPULATIONS

1. Timber harvesting haul roads would be seasonally or permanently closed following timber harvesting if disturbance to big game became excessive.
2. Roadways, landings, and other heavily-disturbed sites would be reclaimed by establishing a ground cover.
3. Adequate snags for cavity-dwelling wildlife species would be left at forest edges, adjacent to aquatic and riparian areas, and near clearcut boundaries.
4. Buffers would be maintained around raptor nest sites.
5. In wooded areas, clearcuts would be restricted to 40 acres or less in size, limited in width to 400 yards, and irregular in shape to enhance edge effect. Adequate thermal and hiding cover for deer and elk would be retained in or adjacent to treatment areas.
6. Forty percent of an elk summer range would be maintained in a forested type with a 75 percent tree canopy.
7. Conifer and aspen harvesting would be prohibited in elk calving areas and a buffer zone would be provided around these areas. Within the buffer zone, timber harvesting would be prohibited between May 1 and June 15.
8. Harvesting in aspen woodland would be prohibited from May 1 to July 15 unless on-site inspection revealed that fawning deer would not likely be disturbed.
9. Pinyon-juniper woodland harvesting occurring in crucial big game winter range would be restricted from January 16 to April 30 if determined to be detrimental to big game.

10. Powerlines would be constructed as described in ***Suggested Practices for Raptor Protection or Powerlines—the State of the Art 1981.***

11. On reservoirs one-half surface acre or larger in size, fencing would be included to provide for development of aquatic and riparian habitat vegetation. Where fencing were included, water would be piped to drinking tanks or water gaps provided to facilitate livestock watering. When feasible, islands would be included as part of the reservoir development.

12. Spring boxes and waterlines with wildlife escape ramps would be installed at all spring developments to provide water for livestock drinking tanks. Seep areas would be fenced at the spring source, and overflow water would be piped to small fenced retention ponds, where feasible, to create riparian habitat.

13. Normally, allotment boundary and road right-of-way fences would be four-strand barbed wire with spacing 16, 6, 8, and 12 inches. Interior pasture fences would generally be three-strand barbed wire with spacing 16, 10, and 12 inches unless special circumstances required a tighter fence. Wire spacings would be from the ground up.

14. The ***Recommended Guidelines for the Maintenance of Sage Grouse Habitat*** promulgated by the Western Association of State Game and Fish Commissioners would be followed when planning and conducting sagebrush control projects within occupied sage grouse habitat. Major points in the guidelines include consultation with the Division of Wildlife, protection of breeding complexes (and nesting areas), winter concentation areas, and design of control areas.

15. Areas receiving moderate to high soil disturbance during treatment or an understory ground cover less than 10 percent would be seeded with a mixture of grass, forb, and browse species. Livestock grazing would be prohibited on all seeded areas for two growing seasons.

16. New roads or trails leading to or on treatment areas normally would be physically closed following completion of the project. Activities occurring during the winter or early spring would be completed in the shortest period and number of seasons possible in critical deer and elk winter range.

17. Roads would be constructed as outlined in BLM Manual 9143.

APPENDIX C

COAL UNSUITABILITY REVIEW

(See Draft Environmental Impact Statement)

APPENDIX D

WILDERNESS REVIEW REPORTING PROCESS

(See Draft Environmental Impact Statement)

APPENDIX E

DESCRIPTION OF RECREATION OPPORTUNITY SPECTRUM CLASSES

(See Draft Environmental Impact Statement)

APPENDIX F

RANGELAND MANAGEMENT

(See Draft Environmental Impact Statement)

APPENDIX G

CONSIDERATIONS USED IN DETERMINING LAND TENURE ADJUSTMENTS

Appendix G has been reprinted because of the extensive changes made between the DEIS and FEIS.

RETENTION OR MULTIPLE USE ZONE

Definition

Tracts or combinations of tracts of public land or interests in land that are retained in public ownership and are managed under the principles of multiple-use and sustained yield.

Considerations

a. Well-blocked tracts of public land.

b. Tracts controlling access to other public lands (except for easements or patent reservations).

c. Areas where community expansion is not expected.

d. Manageable tracts (defined by such factors as access, resource values, compatibility with BLM mission).

e. Areas where public demand for disposal is minimal.

f. Areas valuable for resource programs and protection/management.

g. Areas identified in state and local governments' land-use plans as suitable for public ownership.

h. Areas not in conflict with existing planned intensive development.

Exceptions

a. Recreation and public purpose (R&PP) applications for patents.

b. Resolution of unintentional trespass both occupancy and agricultural.

c. Selection by the state of in-lieu lands.

d. Critical needs for energy development.

e. Lands critical for community expansion.

f. Mining claims to patent.

g. Land exchanges where the public value of the land that is acquired meet or exceed the public value of the land that is disposed of.

h. Land identified in future surveys, including omitted land, where one or more of the disposal zone considerations are met.

i. Land adjacent to existing agricultural, residential, industrial, or commercial land where public ownership interfaces with the logical development of that land.

j. Land containing crucial big game winter range or other resources whose values could best be managed by other federal or state agencies for public use.

COOPERATIVE MANAGEMENT (WITHIN RETENTION ZONE)

Definition

Tracts or combinations of tracts of public land or interests in lands which may or may not be interspersed with private, state, or other agency lands or interests in lands, where several agencies have varying responsibilities for management.

Considerations

a. Special withdrawals and reserves, i.e., Naval Oil Shale Reserve.

b. Broken land pattern with similar management goals among federal, state, or private owners.

c. Public land needed to support or add to other agency or state needs, i.e., Colorado River corridor.

Exceptions

a. Retention for full management responsibility by BLM or disposal through sale or exchange could occur when cooperative management is no longer required.

b. Disposal through exchange could occur where all parties would benefit.

Methods for Cooperative Management

a. Cooperative agreements.

b. Memoranda of understanding.

c. Partial withdrawals.

d. Scenic easements.

DISPOSAL ZONE

Definition

Tracts or combinations of tracts of public land or interests in land that are suitable for conveyance out of federal ownership under existing laws and regulations.

Considerations

a. Isolated and small land parcels.

b. Difficult and expensive to manage (no access, cost benefit low) lands.

c. Tracts not suitable for management by another federal department or agency.

d. Tracts that would serve important public objectives that could not be achieved prudently and feasibly on land other than public land and which outweighed other public objectives that would be served by retaining in public ownership.

Important public objectives include community needs: urban, suburban, and residential,

Industrial and commercial,

Agricultural,

Recreation and other public purposes

e. Long-term public benefits weighed against more immediate or local benefits.

f. Tracts identified in state and local land-use plans as suitable for disposal.

g. Lands identified by public proposals.

Exceptions

a. Where fragile or unique resource values are known and the tract cannot be efficiently managed by another agency.

b. Where disposal would adversely affect management of adjacent lands by other agencies, i.e., Forest Service, State.

c. Where needs exist for R&PP leases, i.e., landfills, detention centers.

d. Where access to other public lands would be cut off (easements or patent reservations might be used).

Methods for Disposal

a. Sales.

b. State selection.

c. State and private exchange.

d. Recreation and public purpose.

e. Desert land entry.

f. Indian allotments.

g. Conveyance of federal minerals under private surface.

h. Color-of-title.

i. Carey Act.

j. Forest Service exchange or boundary adjustment.

APPENDIX H

WATER RESOURCES

(See Draft Environmental Impact Statement)

APPENDIX I

CHARACTERISTICS OF GROUND WATER IN THE GLENWOOD SPRINGS RESOURCE AREA

(See Draft Environmental Impact Statement)

APPENDIX J

RANCH ECONOMICS AND INCOME EFFECTS

(See Draft Environmental Impact Statement)

APPENDIX K

STREAMS AND LAKES PROPOSED FOR MANAGEMENT

(See Draft Environmental Impact Statement)

APPENDIX L

ERRATA FOR CHANGES TO DEIS MATERIAL NOT REPRINTED

Listed in Table L-1 are changes to the DEIS. These changes have been made in response to public comment.

Table L-1. Changes to DEIS Material Not Reprinted

DEIS Page Number	Change
Page x, second paragraph, under Resource Protection Alternative, first sentence	Change "throughout the resource area" to "in the Garfield Capability Unit."
Page x, first column, sixth full paragraph, first sentence	Change this sentence to read: "Various types of wildlife management practices such as vegetation manipulations, wildlife introductions, and water developments would benefit many different wildlife species. Benefits, detriments, and species affected vary with the management practice, its location, habitat type involved, and timing of the project."
Page xi, second column, first paragraph, first sentence	Change this sentence to read: "Various types of wildlife management practices such as vegetation manipulations, wildlife introductions, and water developments would benefit many different wildlife species. Benefits, detriments, and species affected vary with the management practice, its location, habitat type involved, and timing of the project."
Page xii, second column, first paragraph, first sentence	Change this sentence to read: "Various types of wildlife management practices such as vegetation manipulations, wildlife introductions, and water developments would benefit many different wildlife species. Benefits, detriments, and species affected vary with the management practice, its location, habitat type involved, and timing of the project."
Page xiii, first full paragraph, last sentence	Add "resource" between the words "highest" and "values."
Page 5, second column, under Colorado Department of Natural Resources	Change "State Natural Heritage Inventory" to "Colorado Natural Areas Program."
Page 6, first column, top of page, end of the partial sentence	Add: "The Colorado Department of Natural Resources through the Colorado Natural Areas Program identifies and evaluates for BLM natural areas on public land. The Colorado Natural Areas Program gets its data from the State Natural Heritage Inventory, which was developed and is operated under contract by the Nature Conservancy—a private non-profit organization. Roles and responsibilities for this program are outlined in a recently signed memorandum of understanding between the BLM and the Colorado Department of Natural Resources."
Page 6, first column, under Colorado Division of Wildlife, end of sentence	Add: "They also provide information on threatened, endangered, and sensitive plants and animals."
Page 6, first column, Colorado Division of Water Resources	Replace the phrase "...which BLM applies to for water rights" with "responsible for administering water rights, issuing well permits, and approving and inspecting dams."
Page 6, first column	Add the following section following Colorado Division of Water Resources: "Colorado Water Courts. BLM water right applications are processed through the Colorado Water Courts for decrees, modifications, and denials."
Page 6, second column, Counties, Cities, and Towns, under Cities and Towns, first paragraph	Delete last sentence beginning with "This environmental..."
Page 9, second column, Critical Watershed Areas, number 2	Delete the second paragraph which begins "On what..."
Page 9, second column, Aquatic Habitat Management, number 2	Add within parentheses after "Chapter 3" "Appendix K."
Page 10, Terrestrial Habitat Management, number 1	Delete "...and where should public land acquisitions be made."
Page 10, Livestock Grazing Management, number 3	Delete this paragraph.
Page 10, Recreation Resource Management, number 5	Delete this paragraph.

Appendix L

Table L-1. Changes to DEIS Material Not Reprinted—Continued

DEIS Page Number	Change
Page 19, second column, Resource Protection, Economic Development, and Preferred Alternatives	Delete "and Preferred." Add a new paragraph which reads: "Preferred Alternative. Under the Preferred Alternative, conditions in erosion hazard areas would not improve; otherwise the effects would be similar to the Resource Protection and Economic Development Alternatives."
Page 19, second column, Effects, second paragraph	Add the word "and" between Resource Protection and Economic Development. Delete the words "and Preferred." At the end of the paragraph add: "Under the Preferred Alternative, conditions in erosion hazard areas would not improve. Other impacts would be the same as those under Resource Protection and Economic Development Alternatives."
Page 24, second column, Proposed Management Actions, second paragraph	Delete the reference to Map 3-13.
Page 25, first column, Effects, first paragraph, first sentence	Change "Vegetation manipulation proposed to increase big game forage" to "Forage allocation."
Page 27, second column, Effects, first sentence	Change "Vegetation manipulations proposed to increase big game forage" to "Forage allocation."
Page 29, Tables 3-10, 3-11, and 3-12, under Reason Unsuitable for Harvest columns	Replace commas with semicolons.
Page 30, Tables 3-13, 3-14, and 3-15, under Reason Unsuitable for Harvest columns	Replace commas with semicolons.
Page 30, Table 3-14, under Reason Unsuitable for Harvest column, first line	Add: ";Debris flow hazard zone" at end of line.
Page 30, first column, first sentence following Table 3-15	Change "Map 3-30" to "Maps 3-39, 3-40, and 3-41."
Page 36, Table 3-19, PA column, third line	Change "2,918" opposite Thompson Creek to "0."
Page 36, Table 3-19, PA column	Change "22,955" under total for Areas to "20,037."
Page 36 second column, Effects, third sentence	Delete "mud and debris...springs."
Page 39, Table 3-21, PA column	Change "(486,537)" opposite (Public Land Management) to "(480,017)"; change "(56,260)" opposite (Cooperative Management) to "(62,780)."
Page 48, second column, Comparative Analysis	Following last sentence, add: "The No Grazing and No Action Alternatives pertain to livestock grazing only."
Page 51, Table 3-28, Water Yield, No Grazing column, second sentence	Change "unknown increases" to "unknown decreases."
Page 52 and 53, Table 3-28, Terrestrial Wildlife, first four columns, first sentences	Delete the phrase "that prefer grasses to trees and shrubs."
Page 56, Table 3-28, Social and Economic, first column	Change "almost $2 million" to "$1.5 million" and change "$5000,000" to "$300,000."
Page 56, Table 3-28, Social and Economic, second column	Change "over $1 million" to "approximately $500,000 to $700,000."
Page 57, Table 3-28, Social and Economic, first column	Change the "$1 million" to "$1.5 million."
Page 57, Table 3-28, first column, Areas of Critical Environmental Concern	Change "Five areas" to "Four areas," and change "22,955" to "20,037."
Page 58, Table 3-28, Fire Management, second and third columns, first sentence.	Change "wildlife" to "wildfire."
Page 93, first column, first paragraph under Impacts from Mineral Management	Change the number "28,500" to "28,520."
Page 93, second column, first paragraph under Cumulative Impacts on Minerals	Change the number "28,500" to "28,520."
Page 85, first column, Livestock Grazing Assumptions, assumptions 5, 6, and 8	Delete "no" in the first line of assumption 5; change "minimum" to "monitoring" in the second sentence of assumption 6; and change "could be" to "would" under assumption 8.
Page 95, second column, first full paragraph, first sentence	Add: "large acreages of" following "changing," and change "would" to "could."
Page 99, first column, Impacts from Livestock Grazing and Terrestrial Habitat Management, second paragraph	Change "available" to "useable" and add the word "dead" preceding "fuelwood."
Page 116, second column, last line	Change "larger" to "smaller."
Page 120, second columnm, Impacts from Critical Watershed Areas, first sentence	Change "in severe" to "above."
Page 122, first column, third paragraph under Cumulative Impacts on Forestry	Delete the last sentence which begins "This annual..." and replace with "would not likely meet all demands for wood products for the next 10 years."
Page 133, first column, Impacts from Forest Management, fourth paragraph	Change "from" to "by."
Page 137, first column, first paragraph under Impacts from Mineral Management	Change the number "28,500" to "28,520."

Table L-1. Changes to DEIS Material Not Reprinted—Continued

DEIS Page Number	Change
Page 137, second column, fourth paragraph under Cumulative Impacts on Minerals	Change the number "28,500" to "28,520."
Page 138, first column, Impacts from Water Quality Management, first sentence	Delete the word "substantially."
Page 147, first column, partial paragraph at top of page, second and third sentences	Change the words "could" to "would."
Page 147, first column, third paragraph under Cumulative Impacts on Forestry, last sentence	Delete the word "the" and replace with the word "most." Make the word "demand" plural by adding an "s" at the end.
Page 147, second column, partial sentence at top of page	Replace "expected to exceed the demand for" with "would greatly exceed current and projected demand for."
Page 158, second column, first full paragraph	Change "from" to "by."
Page 162, Table 5-30, Acres column	Change "42,644" acres to "42,344," and change "12,052" acres to "11,552."
Page 162, first column, Impacts from Water Quality Management, first sentence	Delete the word "substantially."
Page 174, first column, Impacts from Terrestrial Habitat Management, second paragraph, third sentence	Change "202" to "229."
Page 175, second column, Table 5-35, Change in Employment column	Change "202" to "229."
Page 179, first column, first sentences under Livestock Grazing and Terrestrial Habitat	Delete the phrase "because of vegetation manipulation projects."
Page 180, second column, Minerals, first sentence	Add at end of first sentence: "except where valid existing rights exist."
Page 184, Table 6-1, first, second, and third columns	In the first column, add the name "*Nancy Brooks", in the second column, add the position, "editor", and, in the third column, add the qualifications "BLM—2 years technical publications editor, 1 year writer-editor, 2 years acting public information officer; USGS—3 years editorial assistant, 5 years secretarial assistant/manuscript processing."
Page 191, first column, Seasonal Grazing, second sentence	Insert the word "instance" between the words "for" and "from."
Page 201, first column, last paragraph, second and third sentences	Change "wildlife" to "big game."
Page 201, second column, third full paragraph, first sentence	Change "wildlife" to "big game."
Page 220, Table F-3, Season of Use column	Change season of use for allotment 8913 from '6/15 to 0/15' to "6/15 to 10/15."
Pages 229-234, Tables H-2, H-3, and H-4, Minimum Disturbance column	On all three tables, divide the "Minimum Disturbance" column into two columns called "Minimum Disturbance" and "Maximum Disturbance" as shown in Table H-1.
Page 253, first column, under Browse	Change "alkalized" to "used."
Page 227, second column	Following number 6, add: "For woodland and commercial forest land harvest, the analysis is based on the following ground cover assumptions: ***Woodland:*** *Pinyon-juniper.* Present ground cover—45 percent (clearcut), 45 percent (selective cut) Short-term ground cover—25 percent (clearcut), 30 percent (selective cut) Long-term (10 years) ground cover—50 percent (clearcut), 50 percent (selective cut) *Aspen.* Present ground cover—95 percent (clearcut) Short-term ground cover—45 percent (clearcut) Long-term (10 years) ground cover—95 percent (clearcut) ***Commercial Forest Land:*** Present ground cover—95 percent (clearcut), 95 percent (selective cut) Short-term ground cover—45 percent (clearcut), 60 percent (selective cut) Long-term (10 years) ground cover—95 percent (clearcut), 95 percent (selective cut)"
Map Addendum, Maps 3-42, 3-43, and 3-44, note at bottom of maps	Change "Chapter 3-26" to Table "3-26."

APPENDIX M

COMMENT LETTERS

Following are the comment letters received from federal, state, and local government agencies and environmental groups. Letters from individuals were not printed because of the large number received.

3

COLORADO HISTORICAL SOCIETY

The Colorado Heritage Center 1300 Broadway Denver, Colorado 80203

November 23, 1982

David A. Jones
District Manager
Grand Junction District Office
Bureau of Land Management
764 Horizon Drive
Grand Junction, Colorado 81501

RE: Draft Environmental Impact Statement Glenwood Springs Resource Area

Dear Mr. Jones:

This office has reviewed the above report and have the following comments and requests:

1) On page 79 the number of recorded sites in the resource area is listed and given a priority. We request a list of these sites along with the BLM's assessment of each site. This office should be consulted on determinations of eligibility for these sites.

2) We agree that all areas should be inventoried prior to project activities to determine if any eligible resources will be impacted. A determination of effect must be done for any eligible resources. The above is done in consultation with this office.

3) This office requests a list of sites included in the Blue Hill Archaeological District and the boundaries of this district. A determination of eligibility and/or a nomination form for the National Register of Historic Places should be completed for this district.

If this office can be of further assistance, please contact Jim Green of the Compliance Division at 866-3392.

Sincerely,

Arthur C. Townsend
State Historic Preservation Officer

ACT/WJG:ss

cc: Stephen O. Ellis

6

Al Wright
November 29, 1982
Page 2

The CNAP has identified two areas in the Glenwood Springs Resource Area which may qualify for further consideration as potential natural areas: Dotsero Crater and Eagle Valley Evaporite Formation. We are bringing them to your attention at this time because we thought it would be the best time for you to include them in your land use planning process and in the final Resource Management Plan.

Dotsero Crater.

Considerable interest has existed in this site for a long time: CNAP began investigating the site in 1978 and the site was included in the Department of the Interior's "Natural Landmarks of the Southern Rocky Mountain Region" (1980). A site evaluation form and map describing the site are enclosed for your information. Dotsero Crater and its associated lava flow represent the youngest volcano in Colorado, a state where volcanism is rare (Chronic, H. 1981. Roadside Geology). Its age is estimated at 4000 years. Dotsero Crater is 800 feet deep and one third mile wide; it represents one of the highest priority geologic features in Colorado.

We understand that there are complexities surrounding the patented mining claims on the site. We would like to attempt to clarify the existing mining claim situation before we request BLM permission to register the site. The current cinder mining operation at Dotsero Crater has already produced some impacts on the site and additional mining operations could cause additional impacts. Dave Atkins and Dave Mensing of your staff have helped us to begin sorting out the mining situation at Dotsero Crater. We believe the significant and fragile geology of the site deserves some kind of management alternative which would basically preserve its integrity as a unique geologic feature.

Eagle Valley Evaporite Formation.

The Eagle Valley Evaporite Formation, a Pennsylvanian gypsum formation, is found only in Eagle County, Colorado. Enclosed is a site evaluation form and map describing the site which explains CNAP's reasons for proposing the site for further consideration as a natural area. The proposed area contains the best vegetative representation of this unusual geologic substrate.

Recommendations.

We recommend that you include both the Dotsero Crater and the Eagle Valley Evaporite Formation in your Resource Management Plan as proposed Research Natural Areas or as proposed Areas of Critical Environmental Concern. We would like to work further with your staff to determine the potential of Dotsero Crater and Eagle Valley Evaporite Formation as natural areas for the registry.

6

STATE OF COLORADO

COLORADO NATURAL AREAS PROGRAM
Department of Natural Resources
1313 Sherman Street, Room 718
Denver, Colorado 80203
Phone (303) 839-3311

Richard D. Lamm
Governor

D. Monte Pascoe
Executive Director

Carol J. Pustmueller, Ph.D.
Program Director

November 29, 1982

Mr. Al Wright, Manager
Bureau of Land Management
Glenwood Springs Resource Area
Post Office Box 1009
Glenwood Springs, Colorado 81601

Dear Al:

We request your consideration of the following comments on the Glenwood Springs Resource Area DEIS submitted by the Colorado Natural Areas Program (CNAP), Colorado Department of Natural Resources.

The Program is charged by statute with identifying and protecting a sufficient array of natural areas to represent the different vegetation types and unique natural features comprising Colorado's natural heritage. Natural areas contain rare or quality examples of native plant communities, aquatic systems, geologic features, and habitat for plants and animals of special biological concern. The Program is authorized to: (1) establish a statewide registry of qualified natural areas, involving no written agreement or obligation on the part of any party; (2) designate areas on the Registry by means of voluntary agreements with public/private landowners; and (3) monitor the landowner's/manager's management and protection of designated sites.

The Program's Natural Heritage Inventory provides necessary data to identify and prioritize some of the most outstanding examples of Colorado's natural heritage. Highest priority sites are considered for the Registry by the Colorado Natural Areas Council, an advisory council appointed by the Governor. Registering a site means that the site meets the Program's scientific criteria for a natural area. Even though this step involves no legal obligation on the part of the landowner or the State, placing a site on the Registry is done only with the landowner's approval.

The Colorado Department of Natural Resources and the Bureau of Land Management have a memorandum of understanding which describes a process for the identification, registry, and designation of those areas managed by BLM which qualify as state natural areas (e.g., possess unique natural characteristics of statewide or national significance). The amended version of the MOU is currently under BLM review and is enclosed for your information.

6

Al Wright
November 29, 1982
Page 3

Enclosed is some information on the Colorado Natural Areas Program (Brochure, Guidelines for Registry and Designation, Natural Areas Act, and proposed amended MOU between BLM and the Department of Natural Resources). If you need additional information on the sites or the Natural Areas Program, please call me. I am looking forward to working with you on these important sites. Thank you for your help.

Sincerely,

Carse Pustmueller

Carse J. Pustmueller, Ph.D.
Program Director - Natural Areas Program

CJP:bck

Enclosures

of Colorado

December 9, 1982

Mr. Alfred Wright, Area Manager
Bureau of Land Management
Glenwood Springs Resource Area
P.O. Box 1009
Glenwood Springs, Colorado 81602

Re: Draft Environmental Impact Statement (DEIS) on the Glenwood Springs Resource Management Plan (RMP)

Dear Mr. Wright:

Public Service Company of Colorado and Western Slope Gas Company, a wholly owned subsidiary, appreciate the opportunity to comment on the above referenced DEIS and proposed RMP for the Glenwood Springs Resource Area. In general we are very pleased to see the utilities and communication facilities are given much greater emphasis than in the past.

The establishment of zones which are either suitable, sensitive, or unsuitable for locating future utility facilities is a good first step toward utility corridor planning. However, we feel that the DEIS and proposed RMP fall short of the legislative intent of the Federal Land Policy and Management Act of 1976 to identify and designate both existing and future (planning) corridors in land use plans.

As stated in the Western Utility Group Progress Report on Federal Lands Used Regulations Adversely Affecting the Western Utility Industry:

> "Without acknowledgement of future rights-of-way, land management prescriptions could preclude use of federally administered lands considered critical to routing. Topographic, land use, environmental or technological constraints confine routing opportunities to narrow areas in many western locations. Alternative routing could result in higher transmission line construction costs, greater environmental impacts, and needless waste of energy - these are inconsistent with public policy."

We strongly urge you to take your initial fine planning effort a step further and identify and designate existing utility corridors. Also, it is imperative that planning "windows" and critical corridor segments be identified in the RMP so that other management decisions do not inadvertantly constrict or preclude future sitings of utility and communication facilities.

B. We suggest that a new section be included in each of the four management alternative impacts discussions. These new sections would be titled: IMPACTS ON UTILITY AND COMMUNICATION FACILITIES, and would discuss the impacts on utility corridor planning from other proposed management actions such as livestock grazing, watershed management, aquatic and terrestrial habitat management, wilderness resource management, etc.

4. Appendix A - Possible Management Practices

It is recommended that a new section be included in this appendix titled: UTILITY AND COMMUNICATION FACILITIES. This section could list some of the proposed policies and guidelines for identifying and designating existing and future corridors. Siting criteria could also be listed.

We hope that you will give the above comments and suggestions your full consideration before finalizing the FIS. We realize the difficulty of planning for future utility facilities and corridors and will work with you in any way we can. Since the Glenwood Springs RMP will be somewhat of a prototype and will be utilized by other BLM resource area offices, we feel it is well worth the time and effort to make it as complete as possible. Thank you again for the opportunity to participate in your planning process.

Sincerely,

George J. Vonesh, Jr.
Permits and Land Use Coordinator
Governmental Licensing & Planning

sh

Enclosure

cc: Mr. George C. Francis, State Director
BLM Colorado State Office

Mr. David A. Jones, District Manager
BLM Grand Junction District

Members, Western Utility Group (w/o encl.)

For your information and review, and in order to give you a more clear perspective of our concerns, we are enclosing copies of the following information:

1. A Proposal for Coordinated Corridor Planning Direction on National Forest Lands in the Western States, July 13, 1982.
2. Western Utility Group Response to No.1, October 1, 1982.
3. Bureau of Land Management Corridor Planning Guidelines, September 10, 1982.
4. A Progress Report on Federal Land Use Regulations Adversely Affecting the Western Utility Industry, October, 1982, Western Utility Group.

We would like to turn now to some specific comments on the DEIS.

1. Descriptions of the Alternatives, Table 3-26 Page 43.

We request that the "unsuitable" designations for the bald eagle/blue heron high-use areas and the recreation sites (existing and proposed) be changed to "sensitive". Adverse impacts from utility facilities can be adequately mitigated in these areas. Transmission towers may have a beneficial effect on raptors during nesting and for use as perches during hunting. Since these birds are migratory, construction can be scheduled to coincide with their absence. Similarly, once pipelines are constructed and the surface revegetated, additional impacts would be minimal. Also, the visual impacts of facilities near recreation sites can often be minimized.

2. Chapter 5, Environmental Consequences - Assumptions and Guidelines

It is suggested that a new section be included under this heading and titled: UTILITY AND COMMUNICATION FACILITIES ASSUMPTIONS. This new section could discuss the treatment of existing facilities (i.e. designation of existing corridors); the need for identifying new corridors, critical corridor segments, and planning windows; and criteria and guidelines.

3. Chapter 5, Environmental Consequences - Management Alternative Impacts

A. Impacts from utility and communication facilities on other resource values are treated inconsistently in each management alternative discussion. For example, under Continuation of Current Management Alternative Impacts, the impacts from utility and communication facilities management are only discussed relative to critical watershed areas and no other resources. Under Resource Protection Alternative Impacts, however, there is no mention of utility and communication facilities impacts on critical watershed areas but there is on soils, wildlife, grazing, recreation, and wilderness resources. Similar inconsistencies can be found in the Economic Development and Preferred Alternative scenarios.

Sierra Club

Rocky Mountain Chapter
2239 E. Colfax Ave.
Denver, CO, 80206
Dec. 29, 1982

"... TO EXPLORE, ENJOY AND PRESERVE THE NATION'S FORESTS, WATERS, WILDLIFE AND WILDERNESS. ."

Alfred Wright, Area Manager
Bureau of Land Management
Glenwood Springs Resource Area
P.O. Box 1009
Glenwood Springs, CO,81602

Dear Sir;

The following comments on the GSPA DEIS and Wilderness Technical Supplement are made on behalf of the Rocky Mountain Chapter of the Sierra Club. We have more than 6000 members in Colorado who use and enjoy public land in general and wilderness quality land in particular,and hundreds of other like-minded members who reside in other states and chapters but come to Colorado for recreation.These comments supplement those made orally at the hearing in Denver December 14 and should be entered into the hearing record. Page numbers, Tables etc. referred to in these comments are from the DEIS unless otherwise noted.

General Comments

The Preferred Alternative (PA) of the Resource Management Plan (RMP) is severely and unjustifiably skewed toward motorized recreation, timbering, livestock grazing, and water yield, and severely biased against wilderness and non-motorized recreation. We believe that this PA is contradicted by the following considerations in the DEIS itself:

a). The public appears to favor the primitive and semi-primitive non-motorized recreation opportunity spectrum classes over other types.

b). Timbering is proposed to be done at levels considerably above regional needs for firewood and sawtimber, and will have adverse effects on other economically and esthetically important outputs like wildlife, water quality, and primitive recreation.

c). Livestock grazing is a minor contribution to the region's economy, and has been declining because of population growth on the higher quality grazing lands, yet it outcompetes hunting and other types of wildlife-dependent recreation of greater economic importance in BLM's formulation of the PA.

Normally, we would expect the BLM to choose an alternative somewhere between the environmentalists wish-list (e.g. the Resource Protection Alternative, RPA, which we do generally support) and the local Chamber of Commerce wish-list (e.g. the Economic Development Alternative,EDA). However, in choosing a PA that is outside this bracket, beyond even the EDA in some respects, the BLM is saying that it would like to pursue goals

that are neither ecologically nor economically sound, and which bear little relation to public needs. In our view this is both bad planning and bad land management, and is not justified by any arguments that we can find in the DEIS. We particularly protest the cavalier treatment given to 3 of the 4 WSAs (late word has it that even Eagle Mountain and the bits and pieces of Hack Lake will be dropped because of DOI policy changes). The BLM should adopt its RPA for wilderness.

Finally, the BLM has included no figures and has undertaken no discussion of proposed budgets for any of the alternatives. The National Forest Service performs such analyses in its plans and the BLM should do likewise. Why even *discuss alternatives* that require more funding than is likely to be available?

Specific Comments

Water Quality

Water quality problems in the Milk and Alkali Creek drainages would probably not be improved by the timbering proposed in the PA for the Castle Peak WSA. If poor quality is due to an erosion-prone soil, then surely keeping existing vegetation intact, water run-off reduced, and livestock away from stream banks would help (p. 16).

Water Yield

Water yield and water quality enhancement *efforts for the area* around Castle Peak are in conflict (maps 3-1 and 3-4):an increase in yield cannot but increase soil loss, suspended solids, and dissolved solids. However, the level of effort proposed for the PA (Table 3-1) compared to the RPA or the EPA is an improvement, though the level in the CCMA is better still. The reason for this, as map 4-4 makes clear, is that practically the entire GSRA has easily-erodable soils. In light of current water quality problems in the Colorado River (and the great effort and expense of government agencies to combat them) it seems prudent to us to give water yield a lower priority in the PA.

Critical Watersheds

BLM does not appear to offer enough protection for Critical Watersheds in the PA (Table 3-2), although certainly more than under current management. We believe that in such watersheds, ORV and road travel, timbering, grazing, water yield activities and oil and gas surface occupancy should be strongly curtailed or prohibited. High erosion hazard areas seem to be given least -rotection of all,and municipal watersheds are not protected from the road erosion and harmful drilling fluid residues associated with oil and gas development. It is therefore not obvious to us that effects attributable to the PA (p. 19, col.2) *will in fact occur.*

Minerals

All municipal watersheds and high erosion hazard areas on map3-5 should have "no surface occupancy" stipulations on leases. The sameis true for scenic and recreational lands like those around Castle Peak. Such stipulations would make the RMP conform more closely to local plans

figure is itself contradicted elsewhere (p. 171, where 1.8MMBFY is declared to "meet local needs"). It is also stated that little commercial harvesting of BLM timber has taken place (p. 73), that market conditions "have been poor for several years", and that the one sawmill in the region has shut down, presumably for lack of business (p. 76). Why, under such conditions, the BLM plans to double or treble the allowed *harvest* over and above needs in the PA is not explained. No douht any timber sold will be substantially discounted, and so compete with sawtimber and firewood from private lands-hardly an example of the much touted "good neighbor policy"! It should also be pointed out that firewood use will not increase as fast as the population in the GSRA because of present wood-burning-related air pollution problems in urban areas like Vail and Aspen.

An important forestry issue is the use of the 40 degree slope cut-off for timber harvest suitability. Harvests on such steep slopes will not only be expensive, but also will lead to serious soil erosion. Proposed harvests in some alternatives for greater than 40 degree slopes are absolutely unconscionable in our view-how can the BLM justify the environmental havoc that would be caused by such harvests? In addition to a smaller slope cutoff, the BLM should also use a site productivity index to identify suitable timber lands:we suggest an index of <u>at least</u> 20 cubic feet per acre per year

Use of selection cutting should be qualified. This method can lead to high-grading and deterioration of the genetic quality of the trees on a given site unless healthy and vigorous seed trees are left for re-vegetation. Of course, snags for wildlife and small (only a few acreas), irregular cuts should be used where clear-cutting is the technique of choice.

Bull Gulch and Castle Peak WSAs will both suffer from proposed timber management policies in the PA. On map 4-2, the erosion condition class of the Castle Peak area is poorer than that in the King Mountain area, suggesting that any timbering should be done there first. The omission of 4786 acres of the Bull Gulch WSA from the semi-primitive non-motorized recreation category (p.177) because of timber harvest is not warranted by the somewhat scatterred and hard-to-access fuelwood resources of the area (map 3-18). Allowing primitive non-motorized recreation in Castle Peak for the same area that is planned for timbering in the PA is not consistent--people do not recreate in clearcuts! We believe that the primitive and natural qualities of the Castle Peak area dictate that BLM put this area into the Fire Management or Fire Suppression categories, not Fire Exclusion. Fire is a natural part of any *undisturbed ecosystem*, and prescribed fires at appropriate times might reduce the fuel load--timbering, unless the slash and downed timber is removed, will not.

We conclude that the BLM has not made a convincing case for any substantial amount of either timber or fuelwood cutting in the GSRA, with the possible exception of the already cut King Mountain area. Other lands should be *left unharvested for their* recreational, watershed, and wildlife values. It might also be mentioned here that clearing areas with a lot of downed timber (e.g. Castle Peak) removes cover for game animals like elk. This was a bone of considerable contention in a recent Forest Service sale on the east side of the Flattops.

Recreation/Wilderness

which seek to protect recreational lands in general and scenic corridors like that along I-70(p. 20).

The statement on p.67 that limestone production is to increase more than ten times on BLM lands in the next few years deserves more extensive comment in the DEIS. Why the dramatic increase? Where will the mining occur?In any part of the Glenwood Canyon Scenic Corridor? What will be *the impacts?*

Terrestrial and Livestock Grazing

The discussion of grazing on pp. 72 and 76 is enlightening and contradicts the emphasis on *this activity in the PA.* For example, we learn that the range in the GSRA is in a generally declining condition from past overgrazing (pp. 56-57 state that 128 of the 252 allotments are overgrazed), that considerable efforts would have to be expended (public money?) to improve the range condition, that the livestock industry is not a particularly important part of the local economy anyway ("agriculture represents a small and declining part of the economy"), and that only 7% of the livestock forage need is provided by BLM land. This situation is ripe for a careful cost-benefit analysis of the sort allegedly advocated by the present Administration. Will grazing fees pay for the necessary vegetation manipulations, riparian zone fencing, and other range improvements? If not, how do the present fees of $1.45/AUM compare with grazing fees (or costs) on private range of comparable quality in the region? Factoring in these questions, and considering that livestock enhancementsconflict with wildlife (which is already suffering from reductions in winter range), and considering further how much more the local economy is enhanced by wildlife-based recreation than by livestock production (compare the socio-economic impacts of the PA and RPA on pp. 175 and 127, respectively), it appears that only the RPA of all the alternatives makes overall sense. The BLM should bear in mind that the GSRA is changing rapidly from an agriculture- to a recreation/tourism-based economy. In its PA, the BLM is attempting to keep afloat the moribund segment of *a local industry* by reducing the recreational opportunities for the vast majority of the public , both permanent and visiting. With the encroachment of development on existing wildlife winter range, it is imperative that BLM give a higher priority to the preservation and enhancement of wildlife forage on its lands. Ironically, as the RPA discussion indicates, improved wildlife forage benefits livestock in the longer term.

Forestry

Forestry is another example of a rather minor local industry given more perks in the PA than are necessary at the expense of economically and politically more important resources. The first question that must be answered (and which is not in the DEIS) is:What is the real demand now and in the future for fire wood and sawtimber? Apparently, a harvest of only 0.7MMBFY (p.122) and 1000 cords of firewood (p.73) is necessary to meet local demand, although it is not made clear whether this is the total demand in the area or only that which BLM supplies. The 0.7MMBFY

The RMP places enormous emphasis on motorized and semi-primitive motorized recreation and shockingly little emphasis on primitive and other non-motorized recreation opportunity classes and wilderness. This emphasis cannot be justified for the following reasons:

a). More than <u>30 times</u> more land is devoted to all motorized recreation classes than to non-motorized, and about 80% of the land area in the GSRA is *open to ORV use in the PA* (p. 31, Table 3-16), which is even worse than under a continuation of present management. Yet p.75 states that public land users <u>prefer</u> essentially the kind of "primitive and unconfined recreation" that the Wilderness Act speaks of. Again, on p. 85, we find that public lands users <u>prefer</u> primitive and semi-primitive non-motorized ROS classes. Although nowhere is it explained how this public sentiment was ascertained, if one takes this information at face value, then BLM would actually have to reverse the ratios cited above for ROS classes to meet the real needs of the public for recreation. Certainly all wilderness quality land remaining in the GSRA would have to be recommended for Wilderness. The paltry acreage that BLM has recommended in the PA is scandalous and is even worse than that in the CCMA and EPA. Recent DOI decisions will reduce the recommendation from an amazing 1% to 0%.

b). Non-motorized, and especially wilderness recreation is cheaper to manage and has fewer environmental impacts than motorized types. Roads do not have to be maintained, access needs are minimal, and even trails are unnecessary. In fact, the less the wilderness is tamed by all these amenities, the more like real wilderness it becomes. Among the many charms of the Castle Peak and Bull Gulch WSAs *are the difficulty of access*, which requires more perseverance and imagination on the part of the hiker, and the lack of trails, which exercises orienteering skills. These areas are like the "mountains without handrails" that approach our ideals of what wilderness should be like. And of course, foot traffic is much less likely to cause the soil damage and erosion problems inherent in MV and OPV recreation.

c). The assumption on p. 86 that additional wilderness use in BLM wilderenss would only be "displacement" use ignores the fact the increasing use has strained present wilderness areas to the saturation point and has thus reduced the wilderness experience for those users. Therefore, BLM wilderness in what now has become the Rifle-Vail-Aspen "recreation corridor" would serve to accommodate "overflow" not "displacement" use.

d). The statement is often made in this and other BLM documents that a WSA is not a *"unique wilderness resource". This is too par*ochial a view. What may not, in fact, be a stunningly unique area <u>by Colorado standards</u> (e.g. Castle Peak WSA) is unique enough considering the country as a whole and will seem marvelous indeed to the visitor from the Flatlands. BLM manages lands belonging to and whose management is paid for by the whole U.S. public, not just the Colorado public or the local economic interests. Hundreds of thousands of this general public visit Colorado each year to view its natural and mostly public wonders.

e). Map 3-20 apparently indicates that BLM would like to see a sub-

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stantial acreage shift from the semi-primitive motorized to the roaded-natural class. It seems implausible to us that even that segment of the recreating public that enjoys jeeping would find such a trend acceptable. We wonder how such a trend is compatible with resource protection and with a reasonable road maintainence budget.

Other comments on wilderness/recreation issues:

a). The extra roads around, and access to Bull Gulch that appear on map 3-41 (compare to map 3-38) and the proposed ORV access to the southern section of the BullGulch WSA do not jibe with the present wild and natural qualities of this area. In addition, it is not understandable why BLM proposes in the PA to designate this area as Visual Class II (map 3-31), whereas in the FDA (map 3-30), this area is Class I. This casts serious doubt on on the alleged virtues of purely administrative protections of primitive recreation areas.

b). Map 3-37 lists the Castle Peak WSA as administratively set aside in the PA for "primitive non-motorized recreational opportunities" yet the green color says that ORVs are allowed. These are not compatible uses. ORVs should be excluded from this area. On the other hand, if the BLM is proposing motorized use, why does the jeep road presently on the eastern boundary of the WSA that appears on map 3-38, not appear on map 3-41?

Many of the problems and inconsistencies outlined above could be alleviated if the BLM changed is PA to something much closer to the RPA, but with perhaps even less road building and access purchase than occurs even in the latter. As the DEIS states on p. 177:"Wilderness values would be lost forever on 16,740 acreas". We have far too little roadless land left in this country to find such a situation (in the PA) acceptable.

Land Tenure

The Sierra Club believes strongly that the Federal Government is now proposing to sell entirely too much of its "excess" land. This is also true in the GSRA. We believe that by far the first priority in any land tenure adjustments should go to exchanges, not sales. This is especially true in the GSRA because of the importance of many of the parcels to game animal winter range. If at all possible,scattered winter range areas should be blocked up so that their consolidated area covers the most crucial sections of the winter range. The statement on p. 175 that land sales may lead to a depressed local property market is yet another reason to reduce such sales to the lowest possible level. The total acreage adjestment should not exceed that proposed for the RPA.

We trust that the BLM will find these comments useful, and that the FEIS will adopt a more balanced approach to wilderness and public land management.

Sincerely,

Kirk Cunningham
Conservation Chairman

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P.S. A statement was made in my Dec. 14th testimony that Castle Peak was a unique volcanic feature mentioned in Halka Chronic's "Roadside Geology of Colorado". This is incorrect. The feature referred to in the book is the Dotsero Crater.

cc Congressman Ray Kogovsek
Congresswoman Patricia Schroeder
Congressman Timothy Wirth
Congressman Hank Brown

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STATE OF COLORADO

COLORADO NATURAL AREAS PROGRAM
Department of Natural Resources
1313 Sherman Street, Room 718
Denver, Colorado 80203

Phone (303) 839-3311

Richard D. Lamm
Governor

D. Monte Pascoe
Executive Director

Carol J. Pustmueller Ph.D.
Program Director

January 13, 1983

Mr. Al Wright
Glenwood Springs Resource Area
Bureau of Land Management
Glenwood Springs, Colorado 81601

Dear Al:

Thank you for your consideration of the Colorado Natural Area Program's initial comments on the Glenwood Springs Resource Area's Resource Management Plan and Draft Environmental Impact Statement sent to you on November 29, 1982. I also had an opportunity to briefly review our requests with Dave Mensing last month when DNR was briefed by your staff. I understand the land management complexities associated with both of the proposed sites (particularly Dotsero Crater) and appreciate the potential difficulties your staff will encounter in attempting to balance competing resouce management alternatives on these sites. I'll be glad to work with you on these sites to resolve as many of these potential conflicts as possible.

The following comments, which I would appreciate your including in your review of the draft RMP, are in addition to our earlier comments on specific sites and refer to three sections in the DEIS: (1) interrelationships with other programs; (2) areas of critical environmental concern; and (3) special plants (threatened, endangered, sensitive). The comments mostly suggest clarification of parts of these sections.

Interrelationships with Other Programs

Cooperation with the Colorado Department of Natural Resources on threatened, endangered, and sensitive plant and animal species is with the Colorado Natural Areas Program (CNAP) and the Division of Wildlife. The Colorado Natural Heritage Inventory (CNHI) was developed for CNAP under several contracts with The Nature Conservancy (TNC). All data in the CNHI are the property of the CNAP. CNHI is operated by TNC under contract with the Colorado Natural Areas Program. TNC is a private non-profit organization and not an agency of the Colorado State Government. CNHI identifies and evaluates the most outstanding examples

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of Colorado's natural heritage for the Natural Areas Program. It may be useful to clarify the language on page 5 of the DEIS to accurately reflect this relationship. Specific reference in this section to the new, recently signed Memorandum of Understanding between BLM and DNR which describes a process for the identification, registration, and designation of those areas managed by BLM which qualify as state natural areas (e.g., possess unique natural charcteristics of statewide or national significance) would help reviewers better understand the existing cooperative relationship between DNR and BLM.

Areas of Critical Environmental Concern (ACECs)

I recommend that the "objective" section for ACECs (DEIS, 36) include examples for "natural systems or processes"; for example, protection of rare plants and protection of rare or exemplary ecosystems or geologic features.

Special Plants

The section on threatened or endangered species (DEIS, 73) adequately describes the known listed and sensitive plant taxa in the Resource Area. However, I am concerned that the language contained in the "impacts on vegetation" section (DEIS; 120, 145, 169) -

> No adverse impacts would occur to known (my emphasis) occurrences of threatened or endangered plant species from any management action that has identified a site-specific project location. Threatened, endangered, or sensitive plant species would be protected from adverse impacts of management action through activity plans and environmental assessments when specific site locations are identified.

refers only to those localities which are already known to the Resource Area. The ambiguity of the language contained in the DEIS could be clarified by describing an intention to inventory rare plant or exemplary ecosystems.

Thank you for your consideration of these comments. Please contact me if you need additional information.

Sincerely,

Carse Pustmueller

Carse Pustmueller, Ph.D.
Director
Colorado Natural Areas Program

CP/ljc

pitkin county
506 east main street
aspen, colorado 81611

January 12, 1983

Mr. Al Wright, Manager
Glenwood Springs Resource Area
U.S. Bureau of Land Management
P.O. Box 1009
Glenwood Springs, Colorado 81601

Dear Al:

This is to convey to you the concerns of the Pitkin County Commissioners relative to the Draft Resource Management Plan for the Glenwood Springs Resource Area. Given the limited amount of BLM acreage in Pitkin County, our comments will not be comprehensive in nature, but will address those areas in which the County has established policy or is directly affected by the proposals of the Resource Management Plan.

Wilderness

It has been the policy of Pitkin County to support wilderness designations in areas where wilderness values and resources exist, local governments and populations are not opposed, and no significant resource conflicts are present. Since all the Wilderness Study Areas in the Resource Area appear to meet these criteria, it is extremely disappointing to note the meager wilderness recommendations in this Draft. We find the rationales for the non-wilderness recommendations of Bull Gulch and Castle Peak to be unconvincing. The Draft states on page 80 that these areas include valuable ecological, *geological, recreational, scenic and wildlife resources.* Wilderness designation is the only management option that will provide permanent protection for these resources and there is no reason to believe that wilderness management should present any more "manageability problems" than the several overlapping designations and restrictions that the RMP suggests as an alternative. The timber and motorized recreation opportunities that are given precedence in the case of Castle Peak cannot justify exclusion of this area from Wilderness. Timbering is a minor factor in the local economy in comparison to the recreation industry of which wilderness is an important component. There is ample evidence

that motorized recreation opportunities far exceed demand in the area, while the opposite is the case with primitive recreation. To deny Castle Peak a Wilderness recommendation in favor of these resources is not justified. We find the BLM's apparent anti-wilderness bias to be unacceptable and inappropriate, and we urge the Bureau to reconsider and reverse its wilderness recommendations in the Final Environmental Statement.

Recreation

We do not feel that the significant shift in recreational emphasis from the primitive and semi-primitive end of the spectrum to more motorized and developed recreational opportunities is appropriate or justified. As is noted on page 75 of the Draft, "...most users prefer those (recreational) settings that are most primitive in character." Given this user preference, and given that semi-primitive non-motorized recreational opportunities are presently available on only one-tenth the acreage of semi-primitive motorized recreation, we feel that much greater emphasis must be placed on the preservation and expansion of *primitive and semi-primitive recreation* opportunities. We do not agree with the contention that a reduction of 55% in semi-primitive non-motorized acreage will have low adverse impacts. Such a reduction will represent an irretrievable loss of recreational resources, it will increase use pressure on adjacent National Forest lands, and it will increase management problems associated with motorized recreation such as noise, dust, litter, and unauthorized off-road travel. While we recognize that some road development must accompany BLM management actions, we do not think those roads should be converted to recreational use except in areas where recreational demand and ongoing management needs justify such action.

Thompson Creek Natural Environment Area

While we support the designation of a Thompson Creek Natural Environment Area, we do not think that the management of this area as described in the Draft is sufficiently restrictive. We do not, for instance, support the establishment of a snowmobile parking area at the edge of the area. We think that snowmobile use within the area is totally incompatible with its management as a Natural Environment Area and that establishment of a snowmobile parking area would unnecessarily encourage such use. We also believe that the reclassification of 2,698 acres in Thompson Creek from semi-primitive non-motorized to semi-primitive motorized is similarly incompatible with NEA

management. The area affected by this reclassification is not adequately shown on Map #3-22 and must be clarified in the Final Environmental Statement. In any case, we do not believe that "environmental education opportunities that are more consistent with management objectives for the semi-primitive motorized class" (p. 171) are a worthwhile objective or justification for this reclassification.

Finally, we would request that the Thompson Creek Area be withdrawn from all mineral location, sales, or leasing instead of the partial withdrawal recommended in the Draft. Any mineral development in Thompson Creek would destroy its value as an NEA, and we do not believe that such a withdrawal would have any significant effect on the value of local mineral resources.

Land Tenure Adjustments

In general, we do not object to land tenure adjustments if environmental resources and County Land Use priorities are not sacrificed in the process. The attached comments of the City-County Planning Office speak to the latter question. We note that land tenure adjustments may result in the loss of over 6,000 acres of critical winter range in the Roaring Fork Capability Unit. This loss could translate into unacceptable depletions of big game populations. We request that any adjustments which include critical winter range be limited to exchanges for land of similar value in the same general area so that the maintenance of local wildlife populations is assured.

Water Yield and Timber

We do not think that the benefits of these programs justify their impacts on primitive recreation, wildlife habitat, soil and water quality, and scenic resources. For instance, an 8% increase in water yield will only have beneficial impacts if that increase can be captured and stored for use during water-short seasons. The lack of such storage facilities within the resource area indicates that any increased water yield will not translate directly into beneficial water use, but will instead be lost downstream with other spring runoff flows. The aspen that would be cut in the process has no value on the timber market and would yield only marginal wildlife and domestic forage benefits.

The Draft states that low timber harvest levels (.7 mbf saw-

timber and 2,650 cords fuelwood annually) would meet local timber demands. Given this, and the generally depressed state of the local timber industry, we see no justification for increasing timber targets to 1.8 mbf sawtimber and 3,535 cords fuelwood annually. We believe that vegetation and forest manipulation programs should concentrate on preserving and improving existing wildlife and domestic forage resources rather than subsidizing a timber industry which shows no sign of expanding to deal with increased supplies.

Miscellaneous Points

The proposed snowmobile parking area on the Prince Creek Road is ±1½ miles beyond the furthest point of winter maintenance on that road. While we have no objection to the establishment of a snowmobile parking facility in this area, we do not have any plans to increase winter maintenance levels, and the BLM may wish to reconsider this location with this in mind.

We support the establishment of a river access site in the Snowmass Junction area. Please consult with us as plans for this site develop so it can be integrated with County road and traffic management plans.

On page 158, under Impacts from Minerals Management, the Draft states, "Potential short-term, generally insignificant salinity and sediment impacts would continue to occur from existing mineral developments. Spoil pile runoff would increase surface water salinity and sediment. A secondary source of these impacts would include improperly designed or rehabilitated roads, pipelines, and drill pads. Impacts would continue until...rehabilitation." This rather cursory dismissal of mining impacts is disturbing in light of the potential for increased mining activity and subsequent impacts in the resource area. Does not the BLM have standards that will prevent or mitigate "improperly designed or rehabilitated roads, pipelines and drill pads"? "Rehabilitation" generally refers to revegetation of disturbed soils. Water quality impacts such as those described above can and should be mitigated as part of pre-development site design and permitting and the BLM should make a strong commitment to such mitigation in the RMP.

We would like to see the lower Colorado River corridor designated an Area of Critical Environmental Concern to allow for the strong protection of Great Blue Heron rookeries, Bald Eagle wintering areas, Razorback Sucker habitat, and other unique resources. As the Draft notes on page 163, this corridor is

Letter to Mr. Al Wright, Manager
January 12, 1983
PAGE FIVE

being subjected to heavy development pressure and the irreplaceable resources of the riparian zone are being lost at a rapid rate. The Cooperative Management Area designation is a step in the right direction, but we feel that this is truly an Area of Critical Environmental Concern and should be afforded the greater protection that such designation would allow.

We cannot agree with the statement on page 165 that "localized long-term beneficial impacts to wildlife (from Forest Management), especially big game, would result from increased forage production, habitat diversity, and ease of movement." On the contrary, we think that the adverse impacts of timbering would be long-lasting and severe. These impacts would include loss of solitude and escape cover, loss of calving habitat, and increased harassment, hunting pressure, poaching, and wildfire potential due to increased road access.

In summary, we feel that the Draft RMP overemphasizes development and commodity outputs at the expense of long-term resource values. The final plan should reduce the emphasis on such marginally beneficial programs as water yield and timber harvest and instead increase efforts to improve big game and domestic forage, preserve primitive and semi-primitive recreation opportunities, and preserve air and water quality.

Thank you for the opportunity to comment on this plan, and please let me know if any further information would be useful.

Yours truly,

Mark Fuller
Environmental Coordinator

MF:cd
Attachment

cc: Board of County Commissioners
Glen Horn, Planning Office
Roz McClellan

To produce 5,700 acre feet of water, more than 39,000 acres of high quality wildlife aspen habitat will be manipulated (page 18), with heavy adverse impacts on wildlife. Aspen habitat should be manipulated only to regenerate decadent stands for wildlife improvement.

Reductions in wildlife AUM are made by grazing allotments. The allotments are artificial management units for domestic livestock. The losses caused by land disposal cannot be mitigated properly by allotment. We ask that big game forage be allocated by State Division of Wildlife Management units and that mitigation of all losses, and long-term potentials for increase be included as a major part of the plan.

There is no detail on grazing systems to be used or what their effects will be. Only a brief description is presented in the appendix. Everything will be left to several years monitoring of plans written with the permittees. The future of BLM budgets casts considerable doubt about the agency's ability to monitor the plan.

The devastating effects of aspen and timber removal on thermal, hiding and fawning cover are mentioned in a few brief paragraphs on pages 165 and 166. This material should be featured in the summary and in the description of the preferred alternative.

No detail is offered on costs of range improvements such as manipulation, pipelines, water, fencing, etc. The number or the amount of such improvements is not given. We are asked to accept the plan, with no cost effectiveness study or knowledge of what the direct subsidy to the 175 permittees will be. Past experience tells us it will be anywhere from $30,000 to $50,000 each, plus increased values of their base property due to 37 percent increase in BLM grazing capacity.

The present 37,709 AUM return only $52,793 to the U.S. Treasury from the $1.40 grazing fee. This is a further subsidy, because costs of administration are greatly in excess of this. It is less than the cost of keeping two GS 9 Range Conservationists in the field.

Some of the guidelines on timber are good--they should be featured in the plan, not buried in an appendix.

Some specific comments follow:

Page xii. "Forage allocations for wildlife would result in a decline of 7 percent"

"Because wildlife and livestock would be given equal importance, initial livestock use would be increased 3 percent...."

We do not follow this reasoning. Is it Orwellian "newspeak" or are some resources more equal than others? It is also interesting that the short term 20 percent wildlife decrease is not mentioned here.

Wildlife Management Institute
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DANIEL A. POOLE
President
L. R. JAHN
Vice-President
L. L. WILLIAMSON
Secretary
JACK S. PARKER
Board Chairman

January 17, 1983

Area Manager
Glenwood Springs Resource Area
Post Office Box 1009
Glenwood Springs, Colorado 81602

Dear Sir:

The Wildlife Management Institute is pleased to comment on DRAFT ENVIRONMENTAL IMPACT STATEMENT RESOURCE MANAGEMENT PLAN, GLENWOOD SPRINGS RESOURCE AREA, Colorado.

The plan is not satisfactory for wildlife, in fact its implementation would be destructive for wildlife.

The proposed action includes:

Wildlife AUM (Long Term) (Page 164)	-7 percent
Land Disposal (Page xiii)	23,245 acres
Livestock AUM, Long Term (Page 167)	+37 percent
Timber Harvest (Page 28)	+2 percent
Aspen Manipulation (To increase water yield) (Page 17)	39,492 acres

Our principal objections lie with those items.

It is unbelievable, with 1982 knowledge and forecasts of continued private development, that the government would propose disposing of 14,730 acres of crucial Big Game Winter Range, resulting in decreases of 21 percent in big game forage (page 53) and the loss of $1 million direct income a year from big game hunting (page 57). The total one-time income to the government is projected to be $10-12 million. To casually write off big game income and numbers while increasing livestock income numbers and rancher subsidy thoroughly reveal current BLM objectives and the agency's anti-wildlife policies. A complete elimination of all grazing would reduce rancher income only $2 million a year! Why not do that?

Page 25. PA, Vegetation manipulation will reduce the 20 percent big game decrease to 7 percent. This is the total previously discussed. Where are the effects of land disposal?

Page 47. The preferred alternative wildlife section does not meet all your criteria goals for wildlife.

#1 - Compatible with other agency goals.

#3 - Sensitive to local populace.

#5 - Resource issues of national concern.

Page 57, 3-28. Only 7 percent of the 168 permittees grazing needs are satisfied by BLM lands. There should be a section on economic viability of various sized ranches.

Page 70. Include a discussion of thermal and hiding cover.

Page 70. BLM manages over one-half the winter range, or 400 square miles. 14,730 acres (6 percent) of this is to be sold. We simply cannot understand this when for 40 years most western state wildlife agencies have been buying winter range--and for $10 million BLM will sell this priceless commodity. This priority is completely contrary to the public interest.

Page 70. Include a discussion of game birds and non-game species.

Page 71. Explain why only 8 AMP have been prepared for 175 ranchers.

Note: Pages 82 to 115 are missing from our EIS. These include the Impacts of CCMA Alternative and some of the RPA Alternative which we are not discussing. It also includes the assumptions which we would have examined in detail had they been available. However, nothing in these sections could have overcome our objections to the inadequate treatment of wildlife in this plan.

Page 165. Effects of thermal cover removal should be featured and emphasized in a special section.

Page 167, 5th paragraph. Forage demand by big game exceeds allocation--right but only because livestock are continued to be favored and subsidized, and BLM proposes to sell 6 percent of the crucial winter range.

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Page 174, last paragraph, left column. These figures of losses from big game reduction are complete justification for making wildlife a competitive and co-equal resource. The annual losses in the preferred alternative will be:

Decline of $3.1 million from current $14.8 million in local expenditures for big game recreational activities. Employment decline of 202 man years and a decrease in personal income in the area of $1.6 million.

As a result of this analysis we support the Resource Protection alternative.

These remarks have been coordinated with William B. Morse, the Institute's Western Representative.

Sincerely,

Daniel A. Poole
President

DAP:lbb

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A major shortcoming of the DEIS is that there is no discussion of any anticipated mitigation efforts to reduce identified environmental impacts. The National Policy Act (NEPA) requires an EIS to "Include appropriate mitigation measures not already included in the proposed action or alternative" (Section 1502.14(f)). Section 1502.16(h) requires a discussion of the "means to mitigate adverse environmental impacts." Without inclusion of the means and measures needed to compensate for fish and wildlife losses associated with the proposal, the requirements of NEPA and the CEQ will not be fully met.

The FWS believes that the items presented in this memorandum need to be addressed and incorporated into the Final EIS. This memorandum does not fulfill Section 7 consultation as required by the Endangered Species Act of 1973 (16 U.S.C. 1531, et seq.). For endangered species concerns, contact the Endangered Species Team, FWS, Salt Lake City, Utah (801-524-4430).

We appreciate the opportunity to provide input to this document and if we can be of additional service, please contact our Grand Junction or Salt Lake City staff. The Grand Junction address is: 551 25 1/2 Road, Suite B-113 Independence Plaza, Grand Junction, Colorado 81501 (303-243-2778). The Salt Lake City address is: 1311 Federal Building, 125 South State Street, Salt Lake City, Utah 84138 (801-524-5637).

Thank you in advance for your cooperation.

Sincerely yours,

Field Supervisor
Ecological Services

cc: RO (ENV) - Denver, Colorado

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United States Department of the Interior
FISH AND WILDLIFE SERVICE
AREA OFFICE COLORADO-UTAH
1311 FEDERAL BUILDING
125 SOUTH STATE STREET
SALT LAKE CITY, UTAH 84138

IN REPLY REFER TO (ES) January 19, 1983

MEMORANDUM

TO: Area Manager
Glenwood Springs Resource Area
P.O. Box 1009
Glenwood Springs, CO 81602

FROM: Field Supervisor
Ecological Services

SUBJECT: Comment on DEIS - Glenwood Springs Resource Management Plan

In general, the overall document is well written and easy to understand. *It adequately addresses potential impacts to fish and wildlife resources* for the preferred plan and its alternatives.

The FWS believes that the DEIS does contain several signficant shortcomings or biases that warrant further considered. We believe that the DEIS is unnecessarily prejudicial against wildlife. The Preferred Plan with its forage allocation, land disposal and habitat losses from private land development will result in an unacceptably large decline in existing big game populations.

In a recent survey conducted by Colorado State University, wildlife generated $2.5 billion for the Colorado economy in 1981. Any actions by the BLM that could seriously reduce wildlife productivity and thereby its economic productivity must be done only as a last resort. With the inherent bias of the DEIS this is not the case. On Page 46 of the DEIS the BLM states that the goal of the Preferred Plan is to favor livestock grazing (active preference) over wildlife grazing (existing use). The FWS believes that livestock and wildlife must receive equal consideration in resource and forage allocations.

In addition, the FWS believes land disposal as currently planned will have serious adverse impacts to wildlife especially wintering big game. Disposal of public lands containing significant resource values, especially crucial winter range, is not well advised for the future health of big game herds. Any lands to be sold and/or exchanged should be closely coordinated with Colorado Division of Wildlife big game biologists and only with their concurrence.

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CITY OF GLENWOOD SPRINGS, COLORADO
1885
"Spa in the Mountains"

January 21, 1983

Mr. Alfred Wright, Area Manager
Bureau of Land Management
Glenwood Springs, Resource Area
P. O. Box 1009
Glenwood Springs, Colorado 81602

Dear Mr. Wright:

The City of Glenwood Springs has reviewed the Draft Environmental Impact Statement on the Glenwood Springs Resource Management Plan.

The City has the following comments:

1. We strongly support the Bureau's designation of the critical watershed area above the City as Areas of Critical Environmental Concern (ACEC). These watersheds directly contribute to the serious, periodic debris flows suffered on properties *located within the City limits. While we generally support* the Preferred Alternative, we suggest leaving open to further investigation the extent of vegetative manipulations and other management actions to protect the watershed. The City's debris flow mitigation study has just been completed and should be of value to BLM in completing management proposals for this ACEC.

   The City is an interested party with regard to grazing allotments in the ACEC and requests consultation upon any changes in this and other management practices.

2. The City applauds the proposal to have a BLM-maintained foottrail from the City to the summit of Lookout Mountain. I am certain that the City will do its part to manage the in-city portion to encourage use of this scenic resource.

3. The Bureau's objectives for big game populations under the Preferred Alternative - 21 per cent decline over the next 10 years - are a serious concern to the City. Glenwood Springs and neighboring communities depend heavily on the economic activity generated by tourism. Hunting is a large component of that base activity. It would seem that aggressive efforts by BLM to protect crucial winter range, to increase forage and to work cooperatively with the Colorado Division of Wildlife will more than pay for themselves. The benefits in diversifying the regional economy are substantial.

4. The visual resources of Glenwood Springs are a key to its attractiveness, hence to its economy. The City recommends that the Visual Resource Management Classes for BLM lands visible from within the City be upgraded to Class II or III. Classifications beyond this crucial view plane may be as shown in the Preferred Alternative (classes III and IV). "Retention of the landscape character" (class II) should be a management objective throughout the City's viewshed.

5. BLM should work closely with Garfield County on reconciling management objectives for the Colorado River corridor. As noted in the RMP, the County zoned this corridor industrial to accommodate sand and gravel operations. BLM proposes to allow these operations only if they are consistent with protection of important riparian wildlife and recreational values. This conflict in management of objectives should be resolved, with values balanced by recognizing the importance of both tourism and industry to the region.

On behalf of the City, I appreciate the effort that BLM has expended to make the Resource Management Plan a document balancing the needs of the many varied interests in this large planning area. The City looks forward to working with the Bureau in accomplishing the objectives of the final plan, especially in the critical watersheds above the City.

Sincerely yours,

Stephen M. Pattor, Mayor

enc.

Mobil - 2 - January 25, 1983

Oil Project, Mobil plans to build an oil shale retorting and shale oil upgrading facility on the Roan Plateau directly above the cliff areas proposed for protection. Our preferred design alternative calls for an access road and utility corridor through Cottonwood Gulch and a powerline corridor through Hayes Gulch. This corridor will be evaluated by BLM as part of the Parachute Shale Oil Project just being initiated (Mobil-Pacific EIS). As previously stated in a letter dated May 26, 1982, studies performed by Dr. Allen Crocket, Western Resource Development Corporation, do not indicate the areas are unique or sensitive habitats. The degree of development either existing or planned in adjacent portions of the Colorado River Valley or the Roan Plateau suggest that a number of other suitable areas throughout the Glenwood Springs Resource Area would provide better habitat and be more appropriate for protection.

The potential peregrine falcon introduction areas and raptor concentration areas in Cottonwood and Hayes Gulches are treated inconsistently in the various alternatives. Logically, the Economic Development Alterative should not be more restrictive to resource development than other alternatives. Therefore, to be consistent with the Preferred Alternative, potential peregrine falcon introduction areas and raptor concentration areas in Cottonwood and Hayes Gulches designated as unsuitable for utilities or communication facilities should be eliminated from the Economic Development Alternative.

We also feel the "sensitive" raptor habitat designation of an area near Main Elk Creek (T5S, R91W, Section 15) in the Economic Development and Resource Protection Alternative is improper. Dr. Crockett's wildlife studies in the area do not lead us to believe the area contains unique or "sensitive" raptor habitat. Similar habitat is found throughout the general vicinity. To be consistent with the Preferred Alternative, the "sensitive" designation should be removed from the other alternatives.

On Page 63, the RMP Draft EIS cites the Draft Supplemental Environmental Impact Statement for the Prototype Oil Shale Leasing Program as the basis for the statement, "serious air quality impacts due to oil shale resource development in the Parachute Creek region have been predicted for the area around Rifle." Such statements were questioned when the Draft Prototype Oil Shale Leasing EIS was reviewed and the draft EIS is being revised. Therefore the citation is inappropriate and should be deleted.

Page 15 says that "erosion hazard zones" scattered throughout the resource area would receive special protection. In a recent telephone conversation, Dave Mensing of your office indicated that the erosion hazard zones are only those identified on Map 3-5. This should be stated directly and it should be made clear that erosion hazard "zones" in the text are the same as erosion hazard "areas" on Map 3-5. "Special protection" should also be defined.

We belive that the northeast quarter (NE/4) of Section 24 (T6S, R96W) is incorrectly mapped and documented in the BLM office. Current USGS topographic

Mobil Mining & Coal Division

P.O. BOX 17712
DENVER, COLORADO 80217
TELEPHONE (303) 628-6380

A DIVISION OF
MOBIL OIL CORPORATION

PALMER C. FUSELIER
GENERAL MANAGER - U.S.

January 25, 1983

Mr. Alfred W. Wright
Bureau of Land Management
Glenwood Springs Resource Area
P. O. Box 1009
Glenwood Springs, CO 81602

DRAFT EIS FOR THE GLENWOOD SPRINGS RESOURCE MANAGEMENT PLAN

Dear Mr. Wright:

The Mining and Coal Division of Mobil Oil Corporation (Mobil) appreciates the opportunity to review the Glenwood Springs Resource Management Plan (RMP) Draft EIS. We would like to offer some comments on the EIS for your consideration.

Mobil is proposing construction of a reservoir on Main Elk Creek (T5S, R91W) as part of the Parachute Shale Oil Project. The proposed Main Elk Reservoir will be scrutinized along with the entire project in an EIS just initiated by BLM. In order to construct the Main Elk Reservoir, Mobil, through its wholly owned subsidiary, Main Elk Corporation, has applied for rights-of-way to 480 acres of BLM land needed for reservoir protection, a dam access road and relocation of County Road 243. The requested lands are classified in the RMP Draft EIS as retention land. So long as this designation has no adverse effect or does not jeopardize Mobil's ability to acquire these rights-of-way we do not oppose the proposed retention classification. If the proposed retention classification would adversely affect the pending right-of-way application, we request BLM to consider reclassification of these lands for disposal. We also would hope that retention classification would not necessarily preclude future consideration of these lands for disposal should such classification serve the best interests of BLM, the public and Mobil.

We disagree with the proposed designation of areas in Cottonwood Gulch (T6S, R95W, Sections 15, 19, 20, 22 and 23) and Hayes Gulch (T6S, R95W, Sections 19 and 30; T6S, R96W, Section 24) as unsuitable for development of utilities and communication facilities in the Economic Development and Resource Protection Alternatives.

The BLM has identified the above areas as potential peregrine falcon introduction areas and/or raptor concentration areas. As part of the Parachute Shale

Mobil - 3 - January 25, 1983

and BLM Mineral Title Plats erroneously reflect this tract as a part of the Naval Oil Shale Reserve.

Enclosed is Patent No. 870125 wherein the "March Claims" were patented on June 27, 1922. Since the patent does not reserve oil shale to the federal government, it is Mobil's belief that title to this mineral, as well as the surface, transferred to private ownership in 1922. Mobil is the successor of interest to this patented land. Therefore, Mobil claims ownership to the surface and non reserved minerals, including oil shale. Assuming our records are correct, BLM management of Mobil property for such purposes as peregrine falcon introduction areas or raptor concentration areas, as proposed in the RMP Draft EIS, would be unauthorized.

Sincerely,

Palmer C. Fuselier

SGRichardson/gh
Attachment - Patent No. 870125

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United States Department of the Interior
NATIONAL PARK SERVICE
ROCKY MOUNTAIN REGIONAL OFFICE
655 Parfet Street
P.O. Box 25287
Denver, Colorado 80225

IN REPLY REFER TO
L7619 (RMR-PC)

JAN 26 1983

Memorandum

To: Area Manager, Glenwood Springs Resource Area, Bureau of Land Management, P.O. Box 1009, Glenwood Springs, Colorado 81602

From: Associate Regional Director, Planning and Resource Preservation, Rocky Mountain Region

Subject: Review of Draft Environmental Impact Statement (EIS) for the Resource Management Plan, Glenwood Springs Resource Area, Colorado (DES-82/67)

The National Park Service has reviewed the subject draft EIS from the standpoints of jurisdiction by law and/or special expertise and has the following comments:

The National Park Service supports establishment of wilderness generally as enhancing the overall setting for recreational use and aesthetic quality. From the figures in Table 3-18, it appears that wilderness characteristics will be preserved only when they do not conflict with the alternative in question. We suggest that the final EIS contain a more detailed clarification on BLM's policy regarding wilderness selection.

Along those same lines, we note on page 33 that nomination of the Blue Hill Archeological District to the National Register of Historic Places is not included under the Continuation of Current Management Alternative. Further, page 35 states that areas of critical environmental concern (ACEC's) would not be designated under this alternative. Since there is no obvious explanation for this, we are curious as to the reason for these omissions from the current management plan and recommend that it be discussed in the final EIS.

It also appears from Table 3-19 on page 36 that Keyser and East Canyon Creeks would not be designated as ACEC's under the Preferred Alternative. There is also some question as to the status of Thompson Creek under the Preferred Alternative, with Table 3-19 indicating that it would be designated as an ACEC under that alternative and page 37 saying it would not. This seems inconsistent, and we suggest the final EIS contain a discussion on how an area could be an ACEC under one alternative and not be under another.

Table 3-28 on pages 48-59 includes analysis of a No Grazing Alternative which does not appear in any other part of this document. We believe

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the final EIS should thoroughly examine this alternative in the same manner as the others, or it should be eliminated from Table 3-28.

We must take issue with the unsubstantiated statement on page 46 that the general public does not consider management of cultural resources to be a major issue. If this is BLM's perception, that might explain the failure to include the nomination of the Blue Hill Archeological District to the National Register of Historic Places under the Continuation of Current Management Alternative. It might also explain why the Colorado State Historic Preservation Officer (SHPO) does not appear on the distribution list for this document on page iv. In any case, if BLM is willing to speak for the general public about cultural resources, a statement such as this one should be supplemented by evidence. If no such evidence is available, the statement should be deleted from the final environmental statement.

The Glenwood Springs Resource Area contains several potential National Natural Landmarks. They are as follows:

Eagle County
- Colorado River (State Bridge to Dotsero)
- Deep Creek
- Dotsero Lava Flow and Volcano
- Eagle River
- Gypsum Cliffs

Garfield County
- Glenwood Canyon
- Glenwood Hot Springs
- Grand Hogback
- Rifle Creek Box Canyon

Project planning and implementation of a selected alternative should consider these potential designations and avoid impacts which would adversely affect the ecological and geological features of these areas. Further information on these areas can be obtained from Ms. Carole Madison, National Park Service, Rocky Mountain Region, P.O. Box 25287, Denver Federal Center, Denver, Colorado 80225 (Phone: 234-6443).

Richard A. Strait

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U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
REGION EIGHT
Colorado Division
Post Office Box 25406
555 Zang Street
Denver, Colorado 80225

January 24, 1983

IN REPLY REFER TO
HPD-CO
434

Mr. Alfred Wright
Area Manager
Bureau of Land Management
Glenwood Springs Resource Area
P.O. Box 1009
Glenwood Springs, Colorado 81602

Dear Mr. Wright:

This is in response to your request for comments on the Draft Environmental Impact Statement on the "Glenwood Springs Resource Management Plan."

We have reviewed the document and have no comments.

Thank you for the opportunity to review the statement.

Sincerely yours,

A. J. Siccardi
Division Administrator

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Aspen/Pitkin Planning Office
130 South Galena Street
Aspen, Colorado 81611

January 27, 1983

Mr. Al Wright, Manager
Glenwood Springs Resource Area
U.S. Bureau of Land Management
P.O. Box 1009
Glenwood Springs, Colorado 81601

Dear Mr. Wright,

The Aspen/Pitkin County Planning Office and the Pitkin County Commissioners have reviewed the Environmental Impact Statement (EIS) on the Glenwood Springs Resource Management Plan. This correspondence and the January 12, 1983 letter from Mark Fuller, Pitkin County's Environmental Co-ordinator, constitute the County's official comments on the draft EIS. While Mark Fuller's letter addressed a wide range of County concerns, this letter is oriented primarily toward land use in Pitkin County, particularly the proposed land tenure adjustments.

The "Preferred Alternative" proposes either the sale or exchange of approximately 6,300 acres of land in the Roaring Fork capability unit. Most of the land area proposed for disposal is located in rural Pitkin County and is zoned RS-30 PUD. The RS-30 PUD zone is a resource zone in which development is limited to 1 dwelling unit per 30 acres. We are concerned that the proposed transfer of BLM land to private hands may create significant development pressures in Pitkin County which may result in requests for zoning to higher densities. Since some of the land targeted for disposal is located in the vicinity of agricultural lands and operations, it is possible that the disposal and ultimate development of the BLM holdings could serve as the catalyst for increased development pressures in rural Pitkin County which may result in conflicts between human activity and nearby agricultural operations.

Page 47 of the draft EIS cites several criteria that were used as the basis for selecting the "Preferred Alternative". The first criteria states:

1. "Recommendations should reflect a high degree of compatibility with the goals of other agencies. The "Preferred Alternative" should agree as much as possible with the approved goals of state and local governments and other federal agencies, except as those goals conflict with the laws, regulations and policies directly governing BLM management actions."

It should be very clearly understood that any transfer of BLM lands which results in a conversion of open space wilderness areas to developed land would be inconsistent with County land use policies. Specifically, the proposed disposal of BLM land holdings is in potential conflict with the following three adopted policies of the Pitkin County Land Use Code. These policies and brief explanations of the conflicts are referenced below.

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Policy 2-3.6 "It is the policy of the County to prevent the construction of any improvement or the operation of any use which may cause immediate or foreseeable material danger to significant wildlife habitat or which would endanger a wildlife species."

Approximately 6,000 acres of the land in the Roaring Fork capability unit have been identified by the BLM as critical winter range. The proposed land tenure adjustments may result in the loss of winter range lands and threaten big game populations.

Policy 2-24 "It is the policy of the County to preserve and protect public lands, including but not limited to National Forests and Bureau of Land Management lands, from the impacts of incompatible development." To this end it is the policy of the County to:

2-24.1 Ensure that development surrounding or near public lands will not cause high concentrations of population in such areas.

2-24.2 Avoid development that will encourage the intrusion of roads or high level of human activities on such lands.

2-24.3 Ensure that any development will not result in adverse environmental impacts on such lands as water or air pollution and threats to wildlife habitat by dogs or human activity."

As Map 3-34 of the EIS indicates, portions of the land identified for exchange in the East Sopris Creek valley are located adjacent to or nearby the White River National Forest. Although some of the land identified for exchange may never be developed due to various environmental constraints upon development such as steep slopes, the potential does exist for some development on land located nearby Forest Service land. The development of such land at densities greater than permitted under existing zoning would be inconsistent with the policies cited above. It is very doubtful that the BLM would apply for the upzoning of the land in the East Sopris Creek valley. On the other hand, if the land is transferred to private ownership, it is more likely that there may be a rezoning request for higher density zoning.

Policy 2-25 "It is the policy of the County to provide for efficient phasing of public services and facilities at a reasonable annual growth rate in each planning area of the County; to prevent the location of activities and developments which may result in significant changes in population densities not consistent with the foregoing and, if necessary, to apply building or development phasing procedures designed to assure that the foregoing shall not be exceeded."

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The Colorado
MINING ASSOCIATION

January 27, 1983

Mr. Alfred W. Wright, Area Manager
Glenwood Springs Resource Area
Bureau of Land Management
P. O. Box 1009
Glenwood Springs, Colorado 81602

Re: Draft Environmental Impact Statement,
Glenwood Springs Area Resource Management Plan

Dear Mr. Wright:

On behalf of the Colorado Mining Association I have reviewed the Draft Environmental Impact Statement for the Glenwood Springs Resource Management Plan.

The Colorado Mining Association is a trade association, founded in 1876 and incorporated in 1897. Its membership is composed of (a) companies that explore for, produce, and refine metals, coal, oil shale, and industrial minerals; (b) companies that manufacture and distribute mining and mineral processing equipment and supplies; (c) commercial banks and other institutions serving the mineral industry; and (d) individuals engaged in these various phases of the mineral industry.

The Preferred Alternative would appear favorable to the mining industry, since it would close to mining location fewer acres than the other alternatives. The Preferred Alternative would be advantageous, however, only if the acreage available to mining location is that which contains mineral resources. Lacking specific data regarding the mineralization in the various areas proposed for mineral development, we cannot comment on the four alternatives in this regard. Nevertheless, we would continue to encourage you to protect the rights of access to and development of mineral resources where they are found, since such mineral resources cannot be moved from their sites of occurrence and such sites are unique and uncommon.

Sincerely,

Sylvia J. Sitzman

Mrs. Sylvia J. Sitzman, Chairman
BLM Liaison Subcommittee

SJS:bym

410 Denver Hilton Office Building
1515 CLEVELAND PLACE

Build Colorado Mining

DENVER, COLORADO 80202-5182
TELEPHONE (303) 534-1181

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As indicated previously, the land identified for land tenure adjustment is located in rural Pitkin County. The County seeks to maintain the rural character of the area and has zoned the land accordingly. The County does not plan to provide additional public services in the near future to the BLM land targeted for disposal. The transfer of the BLM land to private hands may result in the demand for additional public services that are not currently being planned for. The provisions of these public services would be in conflict with Policy 2-25.

Based on the potential conflicts outlined above, potential development pressures and the possible resulting adverse impacts on agricultural operations which may be indirectly caused by the proposed land tenure adjustments, Pitkin County prefers the Resource Protection alternative to the "Preferred Alternative".

As Table 5-14 of the draft EIS indicates, under the Resource Protection alternative approximately 2,030 acres of land in the Roaring Fork capability unit will be disposed of. This estimate is approximately 4,280 acres less than the land targeted for disposal under the "Preferred Alternative". As you may know, Pitkin County has adopted land use policies designed to preserve the existing rural character of the County. Although the proposed land tenure adjustments will not directly result in immediate growth, we do feel that the County land use policies can best be met by maintaining the existing BLM land in public ownership. Pitkin County proposes that if the BLM must dispose of, or exchange, any public lands, the land be transferred to a public entity rather than a private ownership. The retention of BLM lands in public ownership will increase the probability that open space and big game winter range will be preserved.

Thank you for referring the draft EIS to us for our comments. Please contact me if the Aspen/Pitkin Planning Office can be of assistance.

Sincerely,

Glenn Horn, Planner
Aspen/Pitkin Planning Office

cc: BOCC
Curt Stewart, County Manager
Mark Fuller, County Environmental Co-ordinator
Sunny Vann, Planning Director
Randy Cote, Division of Wildlife
Dennis Bschor, U.S. Forest Service

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GARFIELD COUNTY Board of County Commissioners

P.O. Box 640 Glenwood Springs, Colorado 81601 Telephone (303) 945-9158

February 22, 1983

Mr. Al Wright, Area Manager
Bureau of Land Management
P.O. Box 1009
Glenwood Springs, CO 81602

RE: Environmental Impact Statement for the Glenwood Springs Resource Area

Dear Mr. Wright:

It has been brought to the attention of the Board of County Commissioners that our letter written to your office regarding the Glenwood Springs Resource Area Environmental Impact Statement may have been subject to misinterpretation regarding wildlife. We would like to clarify our position at this time.

The Board does in fact feel the hunting economy in Garfield County is important. Thus protecting big game population which will attract hunters to the county is a desire of the Board. However, it is not the Board's intent to support wildlife at the expense of existing grazing allotments. The County Comprehensive Plan encourages farms and ranch lands to remain in active and productive use, as well as encourages the protections of major wildlife habitats.

Hopefully this letter wil serve to clarify the Board's position regarding wildlife. If you have any questions, please don't hesitate to contact this Board.

Sincerely,

GARFIELD COUNTY BOARD OF COMMISSIONERS

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GARFIELD COUNTY Board of Commissioners

P.O. Box 640 Glenwood Springs, Colorado 81601 Telephone (303) 945-9158

FLAVEN J. CERISE JIM DRINKHOUSE LARRY VELASQUEZ

January 28, 1983

Alfred Wright, Area Manager
Bureau of Land Management
Box 1009
Glenwood Springs, CO 81602

RE: Environmental Impact Statement for the Glenwood Springs Resource Area

Dear Mr. Wright,

The Garfield County Board of Commissioners appreciates the opportunity to comment on the Glenwood Springs Resource Area Environmental Impact Statement. There are several points concerning the EIS that the Board feels must be addressed.

A primary concern is land tenure. Garfield County has Federally owned land placed in the O/S (Open Space) zone district. The Garfield County regulations currently allow flexibility in this zone district for Federal projects. However, if the public land within the O/S zone district were to transfer into private ownership, we would no longer consider this zone district appropriate. It is our understanding the Board will be given the opportunity to review each land sale or transfer, prior to any action being taken by the BLM. At this point, the Board would like to suggest placing conditions we feel are necessary. The Board is concerned that appropriate zoning is acquired by private individuals or groups who purchase public lands. This zoning will be subject to existing land uses in the area as well as the Garfield County Comprehensive Plan goals for the particular area in question. In regard to this, the Board asks to be given a reasonable time period to review actions which will affect Garfield County. The Board would also encourage the BLM to give priority consideration to local governments that are interested in the purchase, exchange and/or negotiation of Federal lands subject for disposal.

The Economic Development Alternative recommends disposal of public lands in several areas of the County that are currently experiencing development pressure. These areas are Cattle Creek and the Divide Creek/Dry Hollow area south of Silt. There are presently heavily increasing demands on the county roads in both areas. If the additional land is made available to private developers, the potential demand for county services would increase substantially. The land tenure adjustments sited under the Preferred Alternative are more consistent with the County's concerns in the Cattle Creek area; however, the Preferred Alternative and the Economic Development Alternative are the same regarding land tenure in the Divide Creek/Dry Hollow area. It is the desire of the Board to work with the BLM to develop a suitable time schedule for the sale and transfer of lands that will be disposed of in order that potential impacts on county services can be appropriately addressed.

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The following comments are made regarding specific resources addressed in the Environmental Impact Statement:

BIG GAME POPULATIONS:

The Preferred Alternative states that land disposals and additional habitat lost to private land development over the next 10 years will result in an overall 21% decline in big game population. This Alternative also points out a drop in annual personal income over one million dollars could also be expected from the shortfall of available big game forage on public land. Hunting plays a major role in diversifying the economy of Garfield County. Thus, it is the Board's position to support maintaining big game population that will continue to attract hunters to the area. One goal of the County Comprehensive Plan is to protect major wildlife habitats. Therefore, the recommendation in the Economic Development Alternative to dispose of over 5,000 acres of crucial winter range for big game in the Cattle Creek area is inconsistent with Garfield County's Comprehensive Plan.

MINERAL MANAGEMENT:

Due to the increased demands for mineral extraction, the Board would like to express support of continued cooperative efforts with the BLM in dealing with mineral resource development/management.

UTILITY AND COMMUNICATION FACILITIES:

Garfield County will continue to cooperate with the BLM to further identify suitable locations for proposed utility and communication facilities.

TRANSPORTATION:

The Board recognizes the benefits of acquiring easements to currently inaccessable public lands when there are no adverse impacts on the private landowners involved.

WATER QUALITY:

Garfield County supports the recommendation of the Preferred Alternative to increase water yield, reduce sedimentation and decrease the salinity of rivers and streams.

WILDERNESS:

The Board questions the removal of the Hack Lake and Bull Gulch areas from further wilderness consideration studies. The Garfield County Comprehensive Plan states that recreational opportunities provided by wilderness areas are a vital part of Garfield County's tourism appeal.

The use and management of Bureau of Land Management land in Garfield County is a concern of the Board. We support your efforts to complete and implement a final Resource Area Management Plan that is responsive to the needs of the citizens of Garfield County.

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Finally, the Board would like to express it's appreciation to the Bureau of Land Management for the opportunity to comment on this Environmental Impact Statement. If you have any questions or comments, please do not hesitate to contact this Board.

Sincerely,

Garfield County Board of Commissioners

Jim Drinkhouse
Chairman

JD:lw

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STATE OF COLORADO

RICHARD D. LAMM
GOVERNOR

JOHN W. ROLD
DIRECTOR

COLORADO GEOLOGICAL SURVEY
DEPARTMENT OF NATURAL RESOURCES
715 STATE CENTENNIAL BUILDING -- 1313 SHERMAN STREET
DENVER, COLORADO 80203 PHONE (303) 866-2611

TO: Stephen O. Ellis
State Clearinghouse

FROM: Colorado Geological Survey

DATE: February 3, 1983

SUBJECT: GLENWOOD SPRINGS DISTRICT RESOURCE MANAGEMENT PLAN

We must take exception to a portion of the preferred alternative for Minerals Management, namely the closing of 2470 acres in the Deep Creek Canyon area. The closure of this area will have a significant impact on mineral development because it lies in or next to what has been identified as a major high-calcium metallurgical limestone deposit needed for the manufacture of iron and steel. A major steel manufacturer, CF&I, submitted permit applications and a detailed impact analysis for this property as early as 1975. A quarry and plant area would be developed in secs. 28, 33, and 34, T4S, R87W, with an aerial tram extending nearly 4 miles eastward to a rail loadout facility at Dotsero. Deposits of this size and high chemical purity are extremely rare in Colorado, and CF&I's decision to apply for this site came only after many years of exploration and careful economic evaluation. Closing the Deep Creek recreational site to mineral location would, in our opinion, seriously impede or defeat this critical mining proposal and so effect an unnecessary loss of a valuable mineral resource.

Stephen D. Schwochow
Engineering Geologist

It does not appear that there is justification for banning oil/gas drilling along the various streams as shown on Map 3-C. Drilling and production operations are compatible and this has been proven time and time again in both on-shore and off-shore sites around the world.

Lewis R. Ladwig, Chief
Mineral Fuels Section

vt

SDS-83-012

STATE OF COLORADO RICHARD D. LAMM, Governor

DEPARTMENT OF NATURAL RESOURCES

D. MONTE PASCOE, Executive Director
1313 Sherman St., Room 718, Denver, Colorado 80203 866-3311

Geologic Board
Mined Land Reclamation Division of Mines
Oil and Gas Conservation Commission
Division of Parks & Outdoor Recreation
Soil Conservation Board
Water Conservation Board
Division of Water Resources
Division of Wildlife

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January 28, 1983

Mr. George Francis, Director
Bureau of Land Management
1037 - 20th Street
Denver, Colorado 80205

Dear George:

Congratulations on the publication of the Glenwood Springs Draft Resource Management Plan. I gather this is the first RMP to be published by the Bureau of Land Management. It is an exceptionally clear document and should set a high standard for future RMPs.

In general, the preferred alternative is a sound and balanced approach to multiple use management. There are, however, some aspects of the RMP which require some comment:

- Recreation. The State Comprehensive Outdoor Recreation Plan includes more detailed recommendations than is recognized by the RMP. The discussion of consistency should be expanded. In addition, the BLM should consider the desirability of protecting the viewshed of Rifle Gap Resevoir by a finding of unsuitability for most forms of surface occupancy by coal mines.

- Timber. The preferred alternative includes experimentation in increasing water yield by clearcutting of aspen stands. A cautious approach is appropriate. The projected increases in water yields are quite small, especially when compared to the fluctuations in water yield from one year to the next. The Division of Wildlife is skeptical that increased water yields will cause a significant improvement in fish habitat, because increases would come during spring runoff. In some sites, repeated aspen clearcuts might adversely impact scenic values. It may be desirable and economic to cut only old growth, and then to allow regeneration rather than try to keep the land as meadow.

- Road construction. According to the RMP (p. 75), most recreationists prefer primitive settings. Yet the preferred alternative calls for increasing the mileage of roads by over 20%, to provide for more access and to allow timber cuts. The U. S. Forest Service is now preparing a plan which may call for increased roading for building more roads to cut more timber. It would be helpful if the BLM and the Forest Service could work together to assess the likely demand for timber in the area and primitive recreation in the area and plan together to minimize roading.

- Land sales. The RMP states that, under the preferred alternative, lands with "important resource values" would be given a "priority for exchange" rather than for sale. This is not clearly reflected in the criteria in Appendix G. It would be desirable to divide the lands for disposal into two separate categories--lands for sale and lands for exchange. This would allow the BLM to maintain adequate holdings to protect important resource values on an area-wide basis. In addition, we urge the BLM to give first preference to existing grazing permittees on any land sales.

- Wilderness. We strongly urge the BLM to recommend designation of Bull Gulch and of the full Hack Lake area. Bull Gulch has only subeconomic mineral values (p. 53) and is a unique natural area in this part of Colorado. Hack Lake would be a reasonable extension of the Flat Tops Wilderness; the DEIS does not indicate any serious resource conflicts. The rationale for excluding most of the area is that the Flat Tops Wilderness is entirely above the rim; however, in other parts of the Flat Tops the wilderness is below the rim, as noted in the Division of Wildlife comments. If Congress does designate Hack Lake, it would be reasonable to include the very small areas of national forest sandwiched between BLM land and the rim. But Congress has not yet considered Hack Lake, and should be given that opportunity.

  The analysis in the DEIS would be strengthened by an effort to estimate the economic benefits of wilderness designation, using an approach such as that in a recent study by Colorado State University professors, Walsh, Loomis, et. al.

- Wildlife. In the attached comments, the Division of Wildlife raises a number of concerns about inconsistencies between the RMP and the Division's Strategic Plan. In the comments, the Division indicates a desire to meet with the BLM to work out these problems.

- Presentation of the plan. The plan is well-written and relatively easy to understand. The discussion of how the preferred alternative was selected (pp. 45-48) is especially useful to a person who is trying to get an overall understanding of how the BLM proposes to manage the area. In fact, this section might be expanded slightly by including more specific comparisons in the text between the preferred alternative and other alternatives. It might also have been more useful to group environmental impacts by type rather than by alternative in the final chapter.

Sincerely yours,

Mont

D. Monte Pascoe

DMP:ak

STATE OF COLORADO
Richard D. Lamm, Governor
DEPARTMENT OF NATURAL RESOURCES

DIVISION OF WILDLIFE

Jack R. Grieb, Director
6060 Broadway
Denver, Colorado 80216 (825-1192)
711 Independent Avenue
Grand Junction, CO 81505

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February 4, 1983

Alfred Wright, Area Manager
Bureau of Land Management
Glenwood Springs Resource Area
P.O. Box 1009
Glenwood Springs, CO 81602

RE: Comments from the Northwest Region of the Colorado Division of Wildlife to the Glenwood Springs Resource Area Draft Environmental Impact Statement

Dear Mr. Wright:

Through an oversite on our part, we failed to include comments to Appendix K with our earlier comments dated January 21, 1983. We hope they will receive your consideration.

Appendix K

Cabin Creek (King Mountain Capability Unit) and Catamount Creek and Norman Creek (Castle Peak Capability Unit) are marked as not presently supporting fish populations. We know that Cabin and Catamount Creeks support fish and believe that Norman Creek does also. Cabin Creek contains brown trout, cutthroat trout, and brook trout; Catamount Creek contains cutthroat trout and brook trout.

Sincerely,

Perry D. Olson
Regional Manager

PDO:BE:ch

xc: D. Jones, District Manager, BLM, Grand Junction
S. Bissell
Dewitt John, DNR
J. Seidel
D. Hoart
File

Divisional Correspondence Only

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STATE OF COLORADO
DIVISION OF WILDLIFE
DEPARTMENT OF NATURAL RESOURCES

DATE: January 21, 1983

TO: Pete Barrows

FROM: Perry D. Olson

SUBJECT: Glenwood Springs Area Resource Management Plan

I. General Comments

The Northwest Region of the Colorado Division of Wildlife (DOW) believes that big game wildlife populations in the Glenwood Springs Resource Area would suffer from implementation of the Preferred Alternative. Under this plan, current big game populations would receive a 21 percent cut in forage allocations, and while noting that a 5 percent loss of crucial big game winter range would cause a significant impact, the plan proposes to dispose of 6 percent of the total crucial big game range in the resource area. Furthermore, the expected 8 percent decline of crucial big game winter range on private land in the area magnifies the severity of the adverse impacts to big game on BLM land. We recommend that the Preferred Alternative either be modified to place greater emphasis on wildlife resources, or it be rejected.

Criteria for Selecting the Preferred Alternative

The Preferred Alternative is inconsistent with Specific Criteria No. 1 (page 47), because big game populations are projected to be 33 percent short of meeting DOW population goals.

Criteria used for selecting the Preferred Alternative in Terrestrial Habitat Management and Livestock Grazing Management (page 46) results in a detrimental situation for big game wildlife. The Preferred Alternative has allocated forage to meet active preference livestock use, which is forcing wildlife to take existing use. This is not an equitable distribution of forage as, we believe, wildlife should be considered common users of the forage. The Preferred Alternative would set the carrying capacity of the land for wildlife to existing numbers, which is below some previous density estimates. A more equitable situation is to use active preference for livestock and 1988 DOW goals as objectives. This would result in the DOW and the livestock operators taking equitable cuts when forage was limited, but conversely, would allow wildlife numbers to increase in areas where sufficient forage was available.

DOW-A-F-6

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Wildlife Management by Allotment

Throughout the text and tables of this statement, AUMs for wildlife are projected on an allotment basis. This implies that wildlife can be managed on an allotment basis, which is unrealistic and not feasible. The DOW manages big game on the data analysis unit, or herd unit, which may consist of one or more game management units (GMU), and are many times larger than the largest grazing allotment. The DOW will not consider making reductions on big game populations at the GMU level unless there is a 20-25 percent shortage of wildlife AUMs in an entire GMU.

Land Tenure Adjustments

Land tenure adjustments are discussed in several places in the EIS, but not always consistently. On pages 39 and 166 it is stated that the disposal of 14,730 acres, or 6 percent of the total big game crucial winter range would have significant long term effects, while on page 47, it is stated that these lands do not have important resource value. We agree with the former, and generally oppose any sale of big game crucial winter ranges on public lands. The DOW requests the opportunity to comment on individual proposed public land sales, trades, or exchanges, to assess the value of these lands for wildlife.

Land tenure adjustments in R85W,T6S at Lookout Mountain provide public access to Lookout Mountain and the disposal of this land could be inconsistent with Specific Criteria No. 7 (page 48).

Impacts on Social and Economic Conditions

The net changes for personal income and employment shown in Table 5-35 (page 175) are inconsistent with Specific Criteria No. 4 (page 47).

Based on the initial forage allocation, it is estimated there would be a net increase of $27,758.00 of income to ranches in the resource area. At the same time it is estimated that expenditures supporting big game recreational activities would drop 3.1 million from 14.8 million dollars. This information clearly illustrates the value of wildlife to the economy of the resource area. We urge the BLM to reconsider the importance of wildlife in the resource area. Data recently developed by Colorado State University on wildlife values should be used to conduct a reanalysis of impacts to social and economic conditions.

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SVIM Methodology

The DOW has concerns for the use of this system. Attached are two letters from Len Carpenter (DOW, Wildlife Research Leader) in which he has expressed specific criticisms about problems he perceives with the SVIM system.

Monitoring

The BLM has stated, that before any operator has to take a reduction in AUM, and intensive monitoring program will be implemented to establish the validity of the initial allocation process. The DOW requests that the same monitoring program be implemented for wildlife, and the same five year grace period be extended before we are requested to make reductions of wildlife.

Vegetation Manipulation

The Preferred Alternative proposed manipulating 48,240 acres of rangeland for livestock and wildlife during the next 10 years. This manipulation is supposed to result in increased forage which, in the long term, would result in only a 7 percent decrease in wildlife numbers instead of a 21 percent decrease. We are unconvinced this estimate is realistic as we believe vegetation manipulation objectives for wildlife are not always realized.

Forest Management

We generally recommend that all roads to timber sales be closed to the public after the sales are completed.

Firewood cutting should be restricted to specific areas during the big game seasons.

Areas of Critical Environmental Concern (ACEC)

This section adequately addresses the Colorado River cutthroat but does not do likewise for the razorback sucker. Based on available data it would be our recommendation that the section of the Colorado River below Rulison be designated ACEC for the razorback sucker.

Bighorn Sheep Introduction - Grand Hogback

The management plan discussed introduction of three wildlife species into the resource area, but did not discuss the bighorn sheep introduction on the Hogback, which is the only wildlife species for which a formal proposal has been prepared. The Hogback release site is the number one priority for bighorn sheep transplants for the Northwest Region of the DOW. We request that this proposal be accepted as part of the Preferred Alternative for the resource management plan.

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II. Specific Comments

Page 46, Terrestrial Habitat Management and Livestock Grazing Management Paragraph 3

What is the rational for determining that existing use for wildlife is more realistic than DOW goals?

Page 47, Hack Lake

We disagree with the statement that portions of the Hack Lake Wilderness Study Area that lie below the rim of the Flat Tops were felt to be inconsistent with Congress's intent to maintain the Flat Tops Wilderness boundary above the rim. In the early 1970's Congress included the Meadows, South Fork Canyon, Patterson Creek, Wagonwheel Creek, and Trappers Lake in the Flat Tops Wilderness Area. These areas are below the rim. We feel that Hack Lake is a logical extension of the Flat Tops Wilderness Area.

Page 70, Big Game, Mule Deer, Paragraph 4 and Elk, Page 71, Paragraph 2

Statements are made that crucial deer and elk winter range managed by BLM will be required to support greater concentrations of deer and elk; however, under the Preferred Alternative, the allocation of wildlife AUMs by existing use per grazing allotment does not allow for increasing wildlife AUMs in allotments on winter range to meet the anticipated increased number of animals. The result will be less forage for each animal on crucial big game winter range, which could adversely affect the health and numbers of the impacted big game populations.

Page 84, Aquatic Wildlife Assumptions

A fourth assumption could be added to this category to state that the condition of the riparian zone influences the quality of the aquatic environment.

Page 163, Cumulative Impacts on Aquatic Wildlife, Paragraph 4

What is "suitable" aquatic and riparian habitat? Will riparian habitats currently in below average condition be managed to improve their condition? Such action could have beneficial effects on water quality, aquatic wildlife, terrestrial wildlife, and recreation opportunities.

Pete Barrows
Glenwood Springs Area Resource Management Plan
Page Five

Page 165, Impacts from Livestock Grazing Management, Paragraph 7

Utilization of forage by livestock on big game winter range should be limited to 20 percent of available forage, not 20 percent utilization of just browse species.

We would be happy to meet with the BLM to discuss these issues of our concern.

XC: R. Evans
D. Jones, District Manager, BLM, Grand Jct.
A Wright, Area Manager, BLM, Glenwood Springs
S. Bissell
Dewitt John, DNR

PDO:sw

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December 20, 1982

Alfred Wright, Area Manager
Bureau of Land Management
P.O. Box 1009
Glenwood Springs, Colorado 81602

Dear Sir:

Congratulations on a fine EIS document for the Glenwood Springs Resource Area.

The Statewide Comprehensive Outdoor Recreation Plan (SCORP) indicates that State Planning Region 12 receives the highest destination demand for outdoor recreation in the state and that river recreation is an important issue, particularly for the Colorado River. We, therefore, concur with your preferred alternative to focus of recreation management and development in the King Mountain, Castle Peak, and Eagle-Vail capability units.

It appears, however, that in the preferred alternative, the Recreation Opportunity Spectrum (ROS) land allocations are shifting toward roaded natural designation. Yet the demand analysis on page 75 of the Resource Area EIS indicates users "most prefer those settings that are most primitive in character". These two assessments seem to be inconsistent and need reconciliation.

In addition, the statement on page 173 that the "overall adverse affect (of the loss of 19,275 acres of scarce semi-primitive non-motorized recreation opportunities) would be low because user preferences for major activities which occur in the affected areas are equal for semi-primitive non-motorized (SPNM) and semi-primitive motorized (SPM) settings" is misleading.

An indication of equal user preferences is not necessarily an indication of minimal impact. Currently, only 6% of the area is SPNN and this would drop to 2.7% under the preferred alternative. By comparison, 49.4% of the resource area would be classified SPM. If the demand for these settings is "equal", it may warrant an increase in SPNM instead of the 100+ percent decline from existing resource allocation.

STATE OF COLORADO

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Division of Parks & Outdoor Recreation

1313 Sherman Street, Rm. 618
Denver, Colorado 80203
Phone (303) 839-3417

February 25, 1983

Mr. George Francis, Director
Bureau of Land Management
1037 20th Street
Denver, Colorado 80202

Dear Mr. Francis:

Thank you for allowing the State Recreational Trails Committee some additional time to review the White River MFP Wilderness Amendment and the Glenwood Springs RMP environmental impact statements.

The Committee met on February 23 to discuss both of these Plans. The results of the discussions are as follows:

- White River MFP Wilderness Amendment - The Committee passed a motion in favor of the proposed alternative. The Committee felt the proposed alternative was in the best interests of motorized and non-motorized recreationists.
- Glenwood Springs RMP - The Committee concurs with the proposed alternative, except for plans to close the Sweetwater trail to the Hack Lake area to motorized use. The trail is currently open to motorized use and the Committee felt that there hasn't been any damage or other reason to close it. A motion was passed that "trail numbers 2067 and 2032 to Hack Lake remain open to motorized use with an off-road limitation".

Again, thank you for allowing the Committee to respond at this late date.

Sincerely,

Ralph Schell
SCORP Planner

RS:nb
cc: State Recreation Trails Committee

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We recognize that recreation land use is driven to a large degree by factors such as minerals, forestry, and watershed management as well as opportunities available nearby. However, given the user preferences expressed in the EIS and the recreation importance of this area, further analysis and/or explanation of the ROS land commitments is necessary.

Map 3-9 indicates areas acceptable for further coal leasing near the boundary at Rifle Gap/Falls State Recreation area. The Division is not opposed to mining in this area but would recommend no or minimal surface disturbance within visual range from the park. In addition, any mining that potentially could affect the park's reservoir water quality or quantity due to seepage, drainage, or uses to transport or process coal would greatly concern my agency. At such time that coal mining in this area becomes feasible, my agency would like to be involved in the review of proposed mining developments as they relate to these issues.

Thank you for the opportunity to comment.

Sincerely,

Rich Ferdinandsen
Acting Director

RF:JC:nb

RICHARD D. LAMM
Governor

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JERIS A. DANIELSON
State Engineer

OFFICE OF THE STATE ENGINEER
DIVISION OF WATER RESOURCES

1313 Sherman Street-Room 818
Denver, Colorado 80203
(303) 866-3581

January 28, 1983

TO: Dewitt John, State Clearinghouse

FROM: Hal D. Simpson, Assistant State Engineer

SUBJECT: Draft Environmental Impact Statement on the Glenwood Springs Resource Management Plan (DEIS).

As requested, we have reviewed the above referenced DEIS. We believe, overall, the Bureau of Land Management's (BLM) plan is clear and well balanced.

The DEIS comments that the demand for water will continue to grow and be in excess of water supply throughout the western United States. Demand for water already exceeds supply in certain areas on the western slope. For this reason, while stopping short of recommending any of the alternatives, we encourage steps which will increase the annual flows while maintaining a balance of concern for other interests.

The DEIS states that the proposed management plan includes an experiment to better estimate the increase in run-off and baseflow from aspen manipulation. We are very interested in any results obtained from this experimentation.

We commend the BLM for detailing their analysis of the impact of vegetation management and for discussing the timing of the increased flow. We would also like to see a breakdown by watershed of water yield increases.

We realize further research needs to be completed to gain a better grasp on the changes to the hydrologic system due to vegetation manipulation. We would like to comment, however, that according to Hibbert (General Technical Report RM-66) increases in flow due to aspen manipulation decline rapidly if aspen are allowed to recover the site. For example, he states that if clear-cutting is repeated every 80 years, the average annual increase over the 80 years will only be about one-third inch over the area treated. This estimate is much lower than the DEIS estimate.

The DEIS states that an environmental consequence of each alternative will be increased sediment yield because of the soil disturbance associated with road construction. The DEIS, further comments that additional sediment yield will reduce the useful life of the downstream dams and water diversion and retention structures. Is this impact significant? If so, what areas will be

affected by increased sediment yield? Does BLM plan to mitigate the injury to dams and other structures.

We favor only a moderate increase in Wilderness Areas in Colorado. The State Engineer's Office has the responsibility to administer water rights within Colorado. Our main concern regarding the designation of any area as a wilderness area is maintaining motorized access to future and existing reservoirs and irrigation ditch headgates. The motorized access is needed to these projects not only for maintenance purposes, but also for our Water Commissioners to maintain diversion records and our Dam Inspectors to evaluate the safety of dams. If water rights are not affected, then we do not have any problems.

The question "on what public land should the BLM appropriate water for public land management purposes" is rhetorically posed for four different subjects in chapter two of the DEIS. Does the BLM plan to appropriate water for these uses under Colorado Water Law? New livestock water sources such as wells, reservoirs, or catchment basins must be approved, constructed, and maintained subject to Colorado Water Statutes. Fish habitat ponds and recreation facilities must also be approved, constructed, and maintained in accordance with Colorado Water Statutes. We believe the BLM should inform potential buyers and leasors of BLM land that they are subject to applicable water statutes.

In the introductory material, the DEIS gives the interrelationship between the BLM and other agencies and individuals. In this portion of the report, it states that the BLM must apply to the Division of Water Resources (DWR) for water rights. This statement is incorrect. Colorado Water Courts are responsible for decreeing all water rights and changes of water rights. Our office, among other things, is responsible for administering water rights, issuing well permits and approving and inspecting dams that are within certain statutory specification requirements.

HDS/JRH:pkr

cc: Lee Enewold, Div. Eng.

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February 1, 1983

Mr. Al Wright
Bureau of Land Management
P.O. Box 1009
Glenwood Springs, CO. 81602

Dear Al:

I am writing on behalf of Carbondale about the proposed Resource Management Plan. Carbondale is concerned with activities both in and outside its municipal boundaries which may impact its future. Carbondale depends heavily upon tourist dollars especially under the current coal slowdown situation. The tourist attaction to this area depends heavily upon the use and administration of public lands. I will try to keep my comments to the point.

1. Water Yield - Concern over the impact of the Economic Development Alternative on the available water supplies for the municipal water system. Support should be given to the Preferred Alternative.

2. Critical Watershead - Support for the Resource Protection Alternative in the area identified as erosion hazard area east of Carbondale, south of 100 Road.

3. Minerals Management - Support for the Preferred Alternative to include additional lands restricted from mineral leasing in the North Thompson Creek area.

4. Terrestrial Habitat Management - Support for Preferred Alternative. Hunting is an activity which benefits the local economy.

5. Forest Management - Red Hill is a serious area of concern to Carbondale. The area is identified on all alternatives as suitable for fuelwood sales. The Economic Development Alternative also shows fuelwood areas in excess of 40% slope. We could support very limited wood cutting which would have no visual impact from Carbondale. The Economic Development Alternative

76 So. 2nd Carbondale, Colorado 81623 303-963-2733

could not be supported. The Town would like to see the area maintained in a natural state and possibly developed as a passive recreation area in the future.

6. Recreation Management - There should be more river access sites designated on the Roaring Fork and Crystal Rivers. None of the alternatives show any access sites in the vicinity of Carbondale. Much of the property along the rivers is private with no public access. Access to the rivers for boating, fishing and enjoyment is important on both rivers and will become more important as the area continues to develop.

7. Visual Resource Management - On all maps, indicates the area around Red Hill north of the intersection of Highways 82 and 133 is designated as Class IV visual resource. The area is visually important to Carbondale. It is important that the area be improved visually but that no further deterioration of the resource occur.

8. Land Tenure Adjustments - The public lands around Carbondale are important in providing openspace and recreational areas near the Town. If parcels are available for sale, Carbondale would like to have advance notice and be able to participate as possible buyers. The Economic Development Alternative would not be supported and preference should be made for the Resource Protection Alternative.

9. Off-Road Vehicle Management - The Resource Protection Alternative or the Preferred Alternative should be retained.

10. Transportation Management - Carbondale would like to see consideration given to possible public access to public lands on Red Hill. The Red Hill area would be a good future site for some passive recreational uses.

11. Utilities and Communications Facilities - The exposed areas in the valley bottoms and on the surrounding benches would and should be considered unsuitable for above ground construction of utilities. Any utilities constructed underground should be completed in a manner that minimizes scarring of terrain and vegetation. All utility sites should be completely rehabitated. Public lands which are removed from immediate view sheds may be appropriate

Mr. Al Wright
February 1, 1983
Page Three

for construction of facilities. These sites should not allow skylining of structures, should utilize terrain and vegetation to hide structures, should not allow for vegetation clearcutting and should involve careful site review. Significant problems can be avoided with proper preapplication conference review with all impacted entities.

I want to thank you for this opportunity to comment on the plan. Local input is very important to the process which should respond to local needs. Admittedly, these comments are brief but generally cover Carbondale's major concerns.

If we can be of any further assistance to your office, please contact us.

Sincerely,

Davis Farrar

Davis Farrar
City Manager/Planner

DF:nb

United States Department of Agriculture | Forest Service | White River National Forest | Aspen Ranger D 806 West Hallam Aspen, CO 81611

Reply to 1950

Date February 1, 1983

Mr. Al Wright, Manager
Glenwood Springs Resource Area
U.S. Bureau of Land Management
P. O. Box 1009
Glenwood Springs, CO 81602

Dear Al:

The following are comments from the Aspen Ranger District concerning your Draft Environmental Impact Statement for the Glenwood Springs Resource Area:

Page 20 "Locatable Minerals. BLM approval would not be needed if proposed operations would disturb 5 acres or less per year, but notification would be required."

Although this does not directly affect National Forest management, I have a concern that a 5 acre operation, if done improperly and in an environmentally sensitive location, could potentially be of greater significance than a larger operation done properly.

In addition, 5 acres per year can add up quickly over a period of years. The result could be a large project with considerably different impacts and effects than originally planned.

Page 30 In every alternative, you propose disposal of lands resulting in "significant adverse impact on big game through loss of crucial winter range".

In light of the shrinking winter range situation on the Western Slope, it seems land adjustment objectives should recognize the importance of maintaining "crucial" winter range acreages.

Map 3-34 This map shows all lands in the immediate Aspen area in the "Disposal" category. This would include the public parking area and city water facilities on Red Mountain on lot 22, Section 7, T10S, R94W. As we have discussed with your staff previously, we would prefer this area to remain in public ownership because it provides important winter access into Hunter Creek.

FS-6200-11(8-80)

Al Wright, Manager 2

We support your proposal to retain ownership and cooperatively manage the Capitol Guard Station area, Section 25, T9S, R86W. It provides valuable parking and access into East Sopris Creek and Hay Park.

We also support retention of the Eagle Mountain parcel in Section 34, T9S, R86W and Section 3, T10S, R86W.

You show a parcel for disposal in Sections 3, 4, and 10, T9S, R85W which we would like to see retained in public ownership. This parcel contains big game winter range, plus a road for which right-of-way should be preserved.

I trust these comments will be of value and want to stress they are meant in a constructive manner.

Thank you for the opportunity to comment. Please contact me if you need any clarification or wish to discuss any of the above comments.

Sincerely,

DENNIS E. BSCHOR
District Ranger

cc: Board of County Commissioners, Pitkin County
Randy Cote, Division of Wildlife
Mark Fuller, Pitkin County Environmental Coordinator
Sunny Vann, Planning Director
Forest Supervisor, White River N.F.

ASPEN WILDERNESS WORKSHOP, INC.
box 9025 aspen colorado 81611

February 1, 1983

Re: Draft Environmental Impact Statement for the Glenwood Springs Resource Management Plan

The Aspen Wilderness Workshop appreciates this opportunity to make comments on the DEIS for the Glenwood Springs Resource Area's Resource Management Plan. The Aspen Wilderness Workshop is composed of over 100 members who live in or near the Resource Area. We endorse the thorough, balanced planning approach taken in the plan and hope that more resource areas will be able to follow Glenwood's example. We were impressed with the professionalism shown in the scoping process but find this document somewhat confusing. Following are the issues on which we feel qualified to comment. We regret that we do not have the expertise to adequately critique the entire document. Please add these comments to the official record.

Wilderness Recommendations

The Aspen Wilderness Workshop is pleased that the Bureau of Land Management will be recommending wilderness designation for the Eagle Mountain Wilderness Study Area. However, this is the only aspect of the Preferred Alternative's wilderness recommendations that we do agree with. As our name implies, we are an organization of people who support the preservation of the precious little wild lands left in this nation. Colorado, and particularly the Glenwood Springs Resource Area, is fortunate to be the site of a good portion of this valuable resource. We are very disappointed that so little of this area's potential wilderness is being designated for permanent protection.

Regarding the assumptions made to analyze the environmental consequences of the wilderness recommendations, we feel that application of the economic values of wilderness mentioned in the 1981 Colorado State University study by Walsh, Gilliman & Loomis would be appropriate to Wilderness Study Areas in this Resource Area. We also agree with this study that nondesignation of any wilderness study area will result in devaluation of that area both to those who use it and to those who may never visit the site. The non-market values of preservation, primitive recreation, opportunity for solitude and nature study, wildlife observation and appreciation of scenic, natural beauty are valid and must be considered equally with market values such as grazing, timbering and mining.

The concept of multiple use implies that all uses be considered on an equal footing in reaching a decision of what are the best uses. Sometimes these uses are mutually exclusive, such as the use of land for timbering, or mining versus wilderness or recreation. The amount of land available for marketable resources is extensive compared to the amount of land available for wilderness in our public lands. This is especially pertinent in light of the fact that Wilderness Study Area boundaries

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were originally drawn to leave out the richest mineral areas. The Glenwood Springs Resource Area contains approximately 1,280,000 acres of public, state and private land (p. 61, DEIS). 44%, or 566,000 acres (p. 1, DEIS), is public land managed by the BLM. Inventory has found that only 5% of this land has the characteristics to qualify as wilderness. This is only 2% of the entire Resource Area. If the Preferred Alternative's recommendations are enacted, the wilderness values will be lost on all but .03% of the area. We find it hard to believe that the American public cannot produce the minerals and timber that it needs from our region on the remaining 98% of this land.

The Aspen Wilderness Workshop does not believe the values of the Wilderness Study Areas can be adequately protected without wilderness designation. The Preferred Alternative assigns semi-primitive, non-motorized recreation management objectives to some of the Wilderness Study Area acreage. This administrative protection is too vulnerable to subjective interpretation. Any change of administrators could result in a change of interpretation of the objectives. Important decisions could be made affecting these regions without any opportunity for public comment. Under this arrangement, some of the areas would still be available for mineral exploration, with the possibility that claims would be made and ownership transferred to private hands. This would chop up the Wilderness Study Areas and create the possibility of roads and other "improvements" that would ruin their character. Again, the amount of acreage exhibiting wilderness characteristics in this Resource Area is such a small part of the whole that we cannot understand denial of complete wilderness designation.

Hack Lake WSA

The Aspen Wilderness Workshop would like to see the entire Hack Lake WSA recommended as wilderness. It is inappropriate to use topographical features as wilderness boundaries when land on both sides of the feature is suitable to be within the boundaries. The Hack Lake area, with its diverse wildlife and vegetation, virgin forests, varied topography and opportunities for recreation and solitude, is entirely worthy of wilderness designation. The BLM document states that the Forest Service had oppotunities to designate similar areas as wilderness but did not do so. We contend this is all the more reason for the BLM to do so now, especially considering the diversity that wilderness below the rim would add to the System. Because of its proximity to the Flattops Wilderness, the Hack Lake Wilderness would be a compliment to and would be complimented by the existing wilderness. We would recommend transferring management of the entire area to the Forest Service so the two areas could be managed in conjunction. The good access to the Hack Lake area would facilitate use and management of the conjoined wilderness areas.

Wilderness designation for Hack Lake would protect water quality and quantity for this region. All evidence points to a total lack of economic mineral deposits. The lake is the habitat for a Colorado threatened trout species. The lower elevations of the area are important wildlife winter range. Hack Lake Wilderness Study Area offers semi-primitive non-motorized recreation and the BLM's own conclusions agree with ours that demand for this type of recreation is increasing, while opportunities for it are limited in this Resource Area. The historical significance of the Ute Trail through the area is another argument for wilderness designation. We believe that it

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is likely that there would be other important cultural resources in the vicinity of this important route, supporting our belief that it is important to close the area to motorized recreation.

The Hack Lake Wilderness Study Area has an existing high natural quality. Evidence of human disturbance within the area is minimal and inconspicuous. Existing access to the area is good, facilitating manageability and public use. Wilderness designation would assure permanent recreation revenue to the local economy. While timbering would perhaps bring in larger sums initially, this would be short-term and the damage to the vegetation and wildlife of the area would be irrevocable.

In sum, we recommend that the BLM reconsider and grant wilderness designation to the entire Hack Lake Wilderness Study Area. Because it is a unique pocket of the Resource Area, small in size but next to the existing wilderness and a beautiful, diverse natural area, we feel there is no good reason not to recommend it for wilderness.

Bull Gulch WSA

The Aspen Wilderness Workshop supports wilderness designation for the entire Bull Gulch Wilderness Study Area. This area has a very high quality of naturalness and a unique primeval character. There are few traces of man and most of these are well-screened and would re-vegetate on their own once they were protected as wilderness. The Bull Gulch Wilderness Study Area is another opportunity to protect a special place for semi-primitive, non-motorized recreation. We agree with the comment already submitted stating that wilderness designation would allow or enhance more resources than it would restrict. (p. 68, Technical Supplement).

The Bull Gulch Wilderness would be an important asset to the National Wilderness Preservation System as a whole and to the Glenwood Springs Resource Area specifically. While it may be true that other Wilderness Study Area's in the West also offer the pinyon-juniper woodland vegetation type, their status is uncertain and the future of Bull Gulch should not be denied beacuse of these other possibilities. Bull Gulch offers much, much more than just pinyon-juniper. Within its 15,000 acres are also found every ecosystem from riparian to aspen forest to spruce-fir and ponderosa pine forest. The unique opportunity of finding all these ecosystems in such close proximity especially in an area undisturbed by man, makes Bull Gulch special and worthy of wilderness designation. Very little of the pinyon-juniper ecosystem is found in existing wilderness areas so Bull Gulch would compliment the entire Preservation System.

There is no evidence to indicate that marketable quantities of any minerals exist within the Bull Gulch boundaries; the terrain of most of the area is not conducive to mineral exploration or development without considerable expense and environmental damage; the amount of land to be set aside for the Bull Gulch Wilderness Area is insignificant when compared to the millions of acres of land without wilderness potential that still have not been explored for mineral deposits. Yet, in spite of these valid arguments, without wilderness designation, Bull Gulch has no guaranteed protection from future mineral development.

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We disagree with the Preferred Alternative's goal of intensively managing so many of the grazing allotments in this area. It does not seem necessary to meddle with the naturalness of the area for the benefit of a few individuals. This region is imporatant deer and elk range. Any vegetative manipulation should be for the benefit of wildlife habitat especially as hunting dollars are spread throughout the community. The BLM should not feel it has to try to meet every AUM preference goal.

The Aspen Wilderness Workshop questions the need to timber in the Bull Gulch Wilderness Study Area. It seems that the amount of marketable timber available for harvest is not significant, especially considering the permanent damage that would be done to this otherwise pristine environment. Also, given the state of the housing industry, it seems wrong to sacrifice an area like Bull Gulch when the demand could easily be met elsewhere. Local markets for fuelwood are not growing as rapidly as was once anticipated. This should relieve timbering pressure on areas such as Bull Gulch. We question the accuracy of the BLM contention that timbering would not affect the income generated by recreation. We feel that timbering would result in a degradation of the area what would leave it less attractive for recreation, thereby reducing local income.

We do not feel that the presence of the railroad tracks is a significant detraction from the wilderness values of Bull Gulch. We do believe it is important that natural areas like Bull Gulch and Hack Lake be designated as wilderness because of their proximity to population centers and their easy access as areas offering the public an opportunity to easily enjoy the "wilderness experience".

Castle Peak WSA

The Aspen Wilderness Workshop protests the Preferred Alternative's non-wilderness designation for the Castle Peak Wilderness Study Area. Others have made extensive comments objecting to this decision. We agree with these comments, but would like to add the following.

In making this recommendation, it appears the BLM is choosing timbering and motorized recreation over wilderness. In a time when no timber sales are generating a net profit, we question the rationality of this decision. Timbering plays a very minor role in the local economy whereas recreation and tourism play a much larger role. The BLM and others have stated that this resource area needs more opportunities for semi-primitive, non-motorized recreation, which is the increasing preference of people who want to get outdoors (p. 22, Technical Supplement). Furthermore, additional roads would require additional management to make sure vehicles are staying on those roads. Hunters may claim to want more roads for easier access to their game -- until the snows hit and they get stranded miles from anywhere. Then there are serious, life-threatening problems for the hunters, their families and their rescuers. There is also the expense, hassle, and environmental damage created in trying to dig out vehicles. A question of liability for these substantial expenses also exists. The game they are after also stands to lose from the constant stress associated with the building and use of these roads for timbering and jeeping. The demand for wood products can be met by an annual harvest rate of 0.7 million board feet from 52,305 acres of forest (p. 122, DEIS). This does not include the Castle Peak Wilderness Study Area so Castle Peak could be left as wilderness without affecting the timber industry.

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Water quality problems already exist in the Eagle River. The DEIS indicates areas for water quality management to counteract these problems. One of these areas for management surrounds the part of the Castle Peak Wilderness Study Area that is targeted for timbering. The DEIS admits that this timbering would significantly increase erosion on the streams that empty into the Eagle River (p. 78, Technical Supplement). Therefore, it seems to us that the BLM is creating an illogical situation for itself by identifying one part of a watershed for water quality management while opening up contiguous acreage for increased sedimentation. The DEIS states that this increase in erosion would not be noticeable after 3-5 years following cutting (p. 78). However, the document also indicates the intention to allow 469,000 board feet to be cut annually (p. 79). Since 56,300,000 board feet have been designated for cutting, this erosion could go on for 125 years. This is not a short-term problem. The Technical Supplement also states that "alternative supplies of timber exist within and near the resource area" (p. 82.)

Even though streams of the Castle Peak Wilderness Study area may not currently be popular for fishing, Eagle River is. Timbering would ruin any fisheries potential within the area and would seriously jeopardize existing fishing along the Eagle.

We adamantly oppose opening up this potential wilderness area to this kind of destruction.

Wilderness designation for Castle Peak Wilderness Study Area would protect valuable riparian ecosystems. Only 1% of the Resource Area is riparian yet 75% of the wildlife species use it at some time in their lives. Most of this 1% is privately owned; therefore, we feel it is extremely important to protect this precious ecosystem wherever it is found in a potential wilderness area. Protecting this ecosystem will also increase waterfowl hunting opportunities in the Castle Peak Wilderness.

In response to comments regarding aircraft noise, we would point out that only in the northern or southern extremes of this globe is it possible to get away from the noise of airplanes. They are everywhere, this is a fact of modern life. Now that Rocky Mountain Airways has its own airport in Avon, there are no more scheduled flights into the Eagle Airport. As it is the general aviation field serving Vail and as Vail's main season is December through March, this is when Eagle experiences the most air traffic. The fact that most people visit wilderness during warmer weather reduces the impact of air traffice on the wilderness visitor. Also, summer air traffic is less likely to include the loud jets which would be most noticeable from the Castle Peak Wilderness. When Castle Peak is made a wilderness area, it will be indicated on aircraft charts and pilots would be required to avoid it or fly over it at no less than 2,000 feet above the ground.

In sum, we object to the non-wilderness designation of the Castle Peak Wilderness Study Area. We feel there are adequate opportunities for timbering and motorized recreation to be found elsewhere in the Resource Area. We cannot support the reasoning that timbering is necessary to avoid forest fires. Fires are nature's way of doing things and wild areas like Castle Peak should be left to nature. Besides, this "elective surgery" type of approach exhibits an anti-wilderness bias that is objectionable and innappropriate for the BLM. The Castle Peak Wilderness Study Area has all the natural qualities that merit its designation as wilderness.

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The Aspen Wilderness Workshop cares about wilderness lands. We want to see the few remaining wild lands protected for ourselves, our children, and many generations to come. Unfortunately, unless groups like ours object, the present trend is to think only about today and allow short-sighted development to ruin the original, natural character of these lands. We must not let this happen. "Wilderness" is not a term that applies only to the spectacular peaks and ridges. It also applies to the "non-sexy" areas like Bull Gulch, Hack Lake and Castle Peak. There is no opposition to wilderness designation of these areas from local governments or residents. People today want more opportunities to get out in the backcountry and learn about nature's ways away from cars, developments and each other. These three wilderness areas are needed to increase the variety of options for this experience. They are all easy to get to so more people will be able to enjoy them. Their protection as wilderness will have value even to those not fortunate enough to set foot in them. Granting wilderness protections to all four of the Wilderness Study Areas will reduce the land available to mineral location and oil and gas leasing by 3% and 5% respectively (p. 22). It will only deny timbering on 3% of the land (p. 21). By the BLM's own admission, these percentages are insignificant amounts of the whole (p. 94, p. 161). Any of the other management suggestions are not adequate and will be no more practical or workable than wilderness. The BLM has been directed by Congress to protect this valuable American resource. This necessitates wilderness designation for the four Wilderness Study Areas in this Resource Area.

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Visual Resource Management

The Aspen Wilderness Workshop disagrees with the Proposed Alternative's recommendations for Visual Resource Management. We feel the recommendations contained in the Resource Protection Alternative are necessary protections.

It is important that Class I, not simply Areas of Critical Environmental Concern, protections be established and enforced for Bull Gulch, Deep Creek and Thompson Creek. Thompson Creek needs to be included on this list because it is an important recreation area. It is close to population centers and is constantly used by locals and visitors alike in all seasons of the year. Its unique character and physiographic and scenic features are recognized by the BLM (p. 36, p. 81 of DEIS) and we would like to see it protected. ACEC designation is not enough protection for these areas. Class II designation provides for "retention of overall landscape character" (p. 254). This phrase is too open to interpretation and we support Class I Proeections for these three areas.

We are opposed to the Prosposed Alternative's proposal to change 45,332 (p. 178) acres from VRM Class II protections to Class III to allow for timber cutting. The need for expanded timber sales is not demonstrated (p. 30) and it is a known fact that timber sales in this region are a losing proposition. The visual resources of Colorado are an important economic asset and should not be compromised. This is especially the case along I-70 and Highway 131 where the BLM's proposed changes are inconsistent with the Eagle County Master Plan. The

BLM recognizes these areas as visually sensitive (p. 81-82). The Naval Oil Shale Reserve is even identified by the BLM as qualifying for ACEC designation (p. 61). We disagree with reclassifying this important winter range and watershed area to Class III. We recognize this possibly presents an additional obstacle to oil shale development but, until such development becomes more efficient, more environmentally compatible and more economically feasible, we support strong restrictions to protect the visual resources of the area. The BLM document admits Class III areas could be further degraded in the future. While it is true that much of the Naval Oil Shale Reserve is outside of "major" view areas, these other factors must be considered, too.

We are also opposed to changing the 1,365 Class III acres to Class IV designation because of development on private land. This would be seeking the lowest common denominator whereas the BLM should continue to preserve the natural landscape character that still exists in these areas. Existing developments on private lands should be encouraged to revegetate and future developments should be required to do so, through federal state or local permits. The BLM should set the example, not follow it.

The Aspen Wilderness Workshop recommends adoption of the Resource Protection Alternative recommendations concerning Visual Resource Management. Perhaps local volunteers such as the Sierra Club, scout troops, service clubs or the Audubon Society could be called upon to help with revegetation projects.

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Ranching

The Aspen Wilderness Workshop is distressed to see that the BLM rates livestock over wildlife. Some of our members are ranchers and, as a group, we certainly recognize the importance of ranching to the region's economy. However, the Preferred Alternative would result in a net decrease of big game and other wildlife populations, thus resulting in decreased natural diversity and decreased revenue from hunting. We oppose the suggested extensive vegetative manipulations that would result in this decrease, especially since this would require perpetual care. We oppose disposal of big game migration routes and winter range lands, unless this is done in exchange for similar habitat. Here we refer specifically to the 6,000 or so acres in the Roaring Fork Capability Unit slated for disposal.

Timber

How has the BLM come up with its timber and fuelwood demand figures? Without this information, it is hard to know whether to accept these numbers. Things are especially confusing because the DEIS states that four different numbers will each "meet the demand for wood products for the next ten years" (p. 99,122,171,147). Do these demand figures reflect the recent drop in housing, local population expectations and the economy as a whole? Are they based on traditional markets such as farmers and ranchers or on potential new markets? Are BLM demand figures coordinated with the Forest Service, which is also in the throes of planning to meet unknown future wood products needs? Unless this is done, the market, which is already weak, could be flooded with wood. Shouldn't the sights be set beyond ten years? How much timber will be available then? Where will it be?

We abhor the notion of timbering on slopes greater than 40%. Erosion greatly increases on these steeper slopes. Demonstrated demand for timber is not so great that this even needs to be considered. This objection also applies to mineral exploration.

On page 171 of the DEIS, it states: "By intensively managing forest lands, productivity and revenues would increase." We were not aware that it was the BLM's responsibility to increase productivity and revenues. Rather, Congress has charged the BLM with managing all the resources of an area. As the highest demand figures would only bring in $81,000 in federal revenues (p. 174), Why sacrifice our precious wilderness heritage for such a small profit?

We would prefer to see timbering kept out of elk calving aras at all times, not just for six weeks in the spring. Elk are very sensitive to human intrusion, and do not take up that much of the land. This is especially true since summer range is becoming increasingly critical for local elk herds.

Recreation

Again, we question the basis of the BLM's demand figures, especially in light of the significant amount of acreage recommended for semi-primitive, motorized use. The BLM indicates high user preference for non-motorized recreation (p. 22, Technical Supp.; p. 75, DEIS). We contest the statement that the effects of vegetative manipulations and timber harvesting

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would be low on non-motorized recreation (p. 173, DEIS) because this would result in a loss of over half of the acreage now available for this ROS setting. Opening these lands to motorized recreation is asking for additional management problems such as litter, dust, off-road driving and stranded people and vehicles.

As stated earlier, we do not have the expertise to comment on as many of the issues raised as we would like to. So, just because we have not discussed a particular aspect of the document does not mean we necessarily agree with it.

These opinions are those of the Aspen Wilderness Workshop. They have been put together by members of our group. Any resemblance they may have to those made by other groups or individuals is purely coincidence and indicates the breadth of the support for these views.

It has been particularly frustrating while working on these comments to hear rumors of the impending split-up of the Glenwood Springs BLM Office. The RMP process is a good planning method. It will be an insult to the residents of this district and of the entire nation if it all becomes an expensive, time-consuming, useless exercise because the district is broken up to facilitate oil shale development and there are no funds left to manage and protect the other natural resources of this area as called for in the RMP.

We object to the way this draft document emphasizes commodity outputs. We hope that the final RMP will shift this perspective to protection of the natural resources of clean air and water, natural wildlife habitat and forage, and primitive recreation and wilderness.

Again, thank you for this opportunity to have our opinions made a part of the public record.

United States Department of Agriculture — Forest Service — White River National Forest — P.O. Box 948, Glenwood Springs, CO 81602

Reply to: 2320

Date: February 2, 1983

Mr. Al Wright
Area Manager
Bureau of Land Management
P.O. Box 1009
Glenwood Springs, CO 81602

Dear Al:

In addition to the comments in my February 1 letter, I would like to further explain my earlier position regarding the Hack Lake Wilderness study area.

This area is not recommended for inclusion in the Flat Tops Wilderness, except for that portion above the Flat Tops Rim because of it's potential for difficult manageability. Inclusion would create an area tied to the Flat Tops by two narrow strips of wilderness and essentially surrounded by non-wilderness multiple use lands. It would also create a small inholding of non-wilderness National Forest land unless the National Forest portion of the Flat Tops Wilderness were changed. This becomes apparent when the Hack Lake WSA is laid against the Flat Tops Wilderness boundary. For this reason I continue to feel that my earlier recommendation is appropriate.

This does not imply that the Hack Lake area lacks wilderness quality, and that determination was made when your study was done.

I appreciate the opportunity to comment on your draft plan.

Sincerely,

/s/ RICHARD E. WOODROW
Forest Supervisor

FS-6200-11b (7/81)

United States Department of Agriculture — Forest Service — Sopris Ranger District

Reply to: 1900 Planning

Date: December 9, 1982

Subject: BLM Resource Plan

To: Forest Supervisor

Following are Sopris District written comments concerning the Draft EIS and *Resource Management Plan for the BLM Glenwood Resource Area.* As agreed with George Morris, you will consolidate them into a Forest response. It is important that we communicate these concerns to the BLM because their preferred alternative has significant effects on our management. Sopris personnel are also dealing directly with BLM planners and attended their public meeting. The documents are readable and understandable with minimal bureaucratic language. They should be complimented for that. Our specific concerns and/or questions follow and are written as if speaking to the BLM:

1. Clearly, my primary concern is the proposal to designate certain tracts of land for disposal. Specifically, four tracts are BLM driveways to the National Forest. The most critical one is the driveway located in sections 17, 18, and 19, T6S, R88W. This driveway is used by the National Forest permittee to get his cattle to the Forest, provides the only motorized legal access to Hubbards Cave, and is heavily used by recreationists. In addition, this area is shown on your map 4-5 as crucial deer winter range. This tract is shown in your preferred alternative as priority for public sale. I believe this action would be in violation of your General Criteria to Formulate Alternatives (page 13, #2) and your Specific Criteria Used to Select Preferred Alternative (pages 47, 48, #1, 3, 4, and 7). Sale or exchange of this tract would eliminate our permittees ability to access the Grand Mesa C&H Allotment on the west end. This access is critical for implementation of our Allotment Management Plan developed in 1982.

   The second tract is designated priority for exchange, and is the driveway around Consolidated Reservoir, just east of the first tract I mentioned. The uses of this tract are National Forest access for cattle and big game hunting. Although it is not shown as crucial winter range, it is winter range.

   If both of these tracts were not public land, we might lose the ability to graze 298 head of cattle for 1,216 AUM[S/] annually. This would force one, if not both of the permittees out of business and would allow available forage to be left unallocated.

   The third and fouth tracts are the driveways to our East and West Sopris C&H Allotments and are located in sections 29, 32 and 35, T8S, R87W, near Dinkle Lake. Elimination of these tracts would prevent cattle authorized on your Crown, Crown Common, Vasten, Crown Individual, and Prince Creek allotments from legally accessing the National Forest where 1,600 AUM[S/] annually are permitted.

United States Department of Agriculture — Forest Service — White River National Forest — P. O. Box 948, Glenwood Spr, Colorado 81602

Reply to: 1920

Date: January 31, 1983

Mr. Al Wright
Area Manager
Bureau of Land Management
P. O. Box 1009
Glenwood Springs, CO 81602

Dear Al:

Enclosed are comments from the District Rangers that responded in writing to the BLM's Draft EIS for the Glenwood Springs Resource Area. Several Districts have contacted Dave Mensing and offered their verbal comments.

After the meeting on January 20, 1983 with people from your staff and ours, the Forest's most predominate concern was the disposal of BLM lands. This is referred to in your plan as Land Tenure Adjustments. It was also noted upon our visit that all the land recommended for disposal are not shown on the maps included in the draft. We fully realize this would be impossible without larger maps since many of these tracts are quite small. Our concerns with your disposal plan revolve around several issues.

1. Reduced access to National Forest.

2. Reduction of big game winter range. Generally speaking, BLM lands would be more critical big game range than National Forest since they are located at lower elevations.

You and your staff are to be commended on producing a plan that is orderly and easy to read.

Sincerely,

/s/ RICHARD E. WOODROW
Forest Supervisor

Enclosures

FS-6200-11(6-80)

Forest Supervisor

Your Land Tenure Adjustments appendix (pp 225, 226), also indicates these tracts are more adequately classified under Retention. I strongly *disagree with your proposal to classify them for disposal.*

2. What is your rationale for classifying some lands designated as "crucial" winter range for disposal rather than retention?

   Your wildlife objectives could seemingly be better met by emphasizing that by helping agriculture you help wildlife while noting that mountain subdivisions hurt both wildlife and an agriculture based economy (particularly the local livestock industry that is a National Forest objective to assist).

3. I recommend the BLM lands that lie to the west of Basalt Mountain be designated for disposal. The method I have in mind is either exchange or boundary adjustment. As you know, this land has been proposed for National Forest ownership and/or management for many years and it would be in the public's best interest for one agency to manage the area's resources (primarily range and wildlife). I do not think it wise to preclude this rational management option by failing to designate it as suitable for disposal.

4. I favor your proposal to try to obtain easements for roads and trails. In particular, I believe the highest priority in my area is the trail access easement up Thompson Creek, 5 miles south of Carbondale. (See map 3-41).

5. Your designation on map 3-44 and page 43, Table 3-26 for the Sunlight Peak area as being "Sensitive" to utilities and communication facilities, concerns me. Although the area may be "sensitive" from a visual perspective, I am concerned that your classification may force utility and communications companies to make application on the Forest, merely because of your restrictive classification, rather than look at the best alternative. As you know, a large electronics site already exists on Sunlight Peak, including facilities on BLM land that is now designated "sensitive". This may be a small point, but I believe you *understand my concern.*

6. On your map 3-37 you show the area near Sunlight Peak in blue which indicates the area is classified as "ORV Use Limited to Existing Roads and Trails..." I recommend that you change this to green indicating "ORV Use limited to Designated Roads and Trails..." This designation would conform to our ORV use in the Fourmile Park. At present this land is Open to ORV Yearound which is in conflict with our management. On page 40 you state that the White River N.F. ORV plans are unknown. Our Travel Map and regulations have been in effect for over a decade and I recommend that you consult that map for our current management. Local District Rangers, can be contacted for changes that may occur in the Forest Plan.

Forest Supervisor

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7. Also on Map 3-37 and page 41 you are proposing to restrict ORV use in certain areas from 5/7 to 12/31 (areas coded "5"). Why? What value or resource will this protect? I could not find an explanation for this seasonal restriction and wonder what it is.

8. On page 55, under Preferred Alternative, Livestock Grazing, the implication is made that October 15 and November 15 are arbitrary cut-off dates on allotments. This may be my misunderstanding; I would hope that turn-on, turn-off dates are established by your staff in AMP's based on best management practices with each allotment analyzed on it's own.

9. Map 3-41 indicates that a new road may be constructed into the Thompson Creek NEA. Is this accurate? I forsee management problems occuring if this is done and wonder if it was a map error and should have been a trail.

Following are a few comments that deal with format, etc. that may be helpful to you in preparation of the Final EIS.

- page 56, left column, the $5000,000 figure is in error.

- page 26, Existing Livestock Use is not defined in the glossary.

- glossary, page 253, definition of Active Preference is unclear to me.

- the documents would be much easier to read if there was a tie between the narrative and the maps. For example, page 41 could read:

"TRANSPORTATION MANAGEMENT"
(Maps 3-38, 39, 40, 41)

and maps could tie to the narrative by cross-referencing to pages in the narrative.

I have enclosed a map with the public lands outlined in blue showing the disposal areas previously discussed.

Thanks for the opportunity to comment on your Draft. Your staff did a good job.

JACK G. TROYER
District Ranger

Enclosure

United States Department of Agriculture — Forest Service — White River National Forest, Eagle Ranger District

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Reply to: 1920 Land and Resource Planning — Date: January 5, 1983

Subject: BLM Draft EIS - Glenwood Springs Area

To: Forest Supervisor, White River National Forest

I have reviewed the BLM's Draft EIS and have the following comments:

1. OFF-ROAD VEHICLE MANAGEMENT, MAP 3-37 - The BLM proposes to close all or portions of Sections 1,2,3,10,11,12, and 15,T3S,R87W (Sweetwater Creek) and Sections 21,22,23,T4S,R87W (Deep Creek) to ORV use year around. Adjacent National Forest land at Sweetwater is closed yearlong to motorized travel off Forest roads except trail vehicles operating on Forest trails and snowmobiles operating on snow. Adjacent National Forest land at Deep Creek has no ORV restrictions.

   I feel that ORV restrictions on adjacent areas of National Forest and BLM land should be the same (under most circumstances) to provide a logical travel management policy to the public. We need to discuss the situation with the BLM to determine if a travel management plan can be developed that will meet land management objectives and be more readily accepted by the public.

2. LAND TENURE ADJUSTMENTS - MAP 3-34 - The BLM has identified portions of Sections 19,20,21, and 28,T5S,R83W and Section 24,T5S,R84W as priority lands suitable for disposal by exchange. Public access to National Forest land in the Salt Creek area has been a serious problem over the last two years, particularly during hunting season.

   The BLM land in question may be needed in the future for a new road to provide access to the Forest. If these lands are exchanged, a provision should be made to insure the Government can obtain a road right-of-way, if needed, at some future date.

I plan on attending the meeting with the BLM on January 20, 1983.

STEPHEN K. KELLY
District Ranger

United States Department of Agriculture — Forest Service — Rifle Ranger District, 1400 Access Road, Rifle, CO 81650

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Reply to: 1520 Federal Agencies External Relations — Date: January 25, 1983

Subject: Comments on BLM EIS

To: Forest Supervisor, White River N.F.

On January 20, 1983 I attended the meeting with BLM for which the objective was commenting on their RMP draft EIS for the Glenwood Springs Resource Area. As a result of that meeting, I believe the following comments should be forwarded as an official response.

First, they should be commended on their organization of this complex document. The discussion is orderly and generally, with the possible exception of an index, seems to comply with CEQ regulations.

The discussion of Forest management consistency (pg. 30) may overemphasize the policies of the Forest Service. At the least, other consistency discussions should equally recognize consistency with our policies for other resources such as recreation, range management, and water yield management.

Finally, although the map scale may be too small to show, records for map 3-8 should take into account the 4.78 acres withdrawn from mineral entry at the Fravert Administrative site (see F.R. 47 #154 of 8/10/82).

Our discussion did confirm that the disposal classification on map 3-34 in the vicinity of the Fravert Administrative site was only for the balance of the tract and excluded the Administrative site.

As the Rifle District prepares the new travel management proposals this winter, we will continue to review and discuss consistencies or inconsistencies with Al Wright and his staff.

JAMES L. SIMONSON
District Ranger

College of Arts and Sciences
Department of Biological Sciences

University of Northern Colorado

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February 1, 1983

Area Manager, Bureau of Land Management
Glenwood Springs Resource Area
P. O. Box 1009
Glenwood Springs, Colorado 81602

Dear Sir:

I have reviewed your draft environmental statement on the Glenwood Springs Resource Management Plan and wish to comment on its contents. I congratulate you on the undertaking of such a tremendous task and the effort you have put forth to develop a variety of feasible alternatives for management of this resource area. I will not comment further on the thoroughness of the alternatives but wish to express some concerns that I have with the draft EIS.

Page xi and xii. You state that "wildlife habitat projects such as vegetation manipulations, introduction of species, water developments, and riparian habitat improvement would benefit all wildlife species". This is not true for when you alter a habitat, manipulate vegetation, introduce new species, etc. Some benefit and others lose.

Under Comparative Analysis, Table 3-28. Summary of Major Actions and Impacts, pages 52-55. This table is very difficult to interpret in a meaningful way. Example: when you compare livestock grazing of the Continuation of Current Management Alternative with Preferred Alternative, you project a 37 percent greater use than existing use. What is your data base for this projection -- does it refer to herb, shrub or woody vegetation - winter use or summer use, is this usage computed from measurements of air dried forage or is it based on Soil Conservation (SVIM) data and are your conclusions based only on a 1 year vegetaion study July to October, 1979 (see page 203)? The Bureau of Land Management land typically has a lower production level than privately owned property and considerable error may be found in extrapolating SCS data or SVIM range class and production data from one area to another. From my visual assessment of vegetaion of the Roan Cliffs (Naval Oil Shale Reserve) area and a review of D. W. Keammerer's 1980 and 1981 reports on the Vegetation of the Naval Oil Shale Reserve (Stoecker-Keammerer and Associates, Boulder, Colo.) I doubt that the proposed production increases could be obtained, especially on an economically feasible basis. (How does the directive from the Naval Oil Shale administrators stating that range improvement expenses must be self supporting by use of grazing fees, etc. effect this resource management plan?) Thus, to accurately evaluate the proposed AUM increases and vegetation production in this summary section, pounds in production of forage of this resource area should be reported and proposed increases documented on similar sites.

Concerning the improvement of the threatened Colorado River Cutthroat Trout on the Naval Oil Shale Reserve, I doubt if this can be done especially if sedimentation is the issue. An examination of the soils and terrain of this region will show that the major drainages are very steep and eroding rapidly. The light-thin-loose soils and associated sub-surface material of the Wasatch Formation which underlies the Green River Formation of the Naval Oil Shale Reserve is subject to rapid erosion. Any major storms, of which there are a number each summer, bring sediments to main drainages bisecting the Naval Oil Shale Reserve. I am not aware of any vegetaion manipulation practice that would decrease sedimentation appreciably in the East Fork and Middle East Fork drainages of Parachute Creek on the Oil Shale Reserve.

The draft EIS should describe in detail how the vegetation and aquatic habitats are to be manipulated before one can accurately evalutate the resource management plan. Undoubtedly some organisms would benefit from proposed manipulations as identified in the various alternatives, but other organisms would suffer and the latter is not well defined.

Tables F - 1 and F - 2, pages 206 - 217. Livestock and Wildlife Forage Allocations and Impacts. These tables represent a good exercise in extrapolation mathematics. I do not believe accurate data exists to support the detailed extrapolation as is reported in Table F - 1 and I am positive it is not available for that reported in Table F - 2. Thus, I would suggest including only projected ranges of allocations in a short summary as one could determine from scattered data and best estimates.

One receives the general feeling after reviewing the documents that the total Glenwood Springs Resource area is overgrazed. I have spent many years in this region both as a permittee and as a professional biologist. Range management practices during the last 20 years has brought the Roan Cliffs (Naval Oil Shale Reserve) region back to an excellent condition such as I observed in the summer of 1982. Also, there is some evidence, photos, etc. which suggest that this range has changed little over the last 75 years.

In summary, I would like to see more evidence as obtained from solid base line studies included within the EIS to support the various alternatives suggested. The absence of such base line data and clear explanations, as referred to, weakens the report - realizing, of course, that your agency has done considerable resource planning with the information available.

Sincerely,

Ivo E. Lindauer

Ivo E. Lindauer, Ph.D.
Professor of Botany

Natural Resources Defense Council, Inc.
Public Lands Institute
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February 1, 1983

Mr. Alfred Wright, Area Manager
Glenwood Springs Resource Area
Bureau of Land Management
P. O. Box 1009
Glenwood Springs, Colorado 81602

RE: Draft Environmental Impact Statement on the Glenwood Springs Resource Management Plan

Dear Mr. Wright:

The following comments on the Draft Environmental Impact Statement on the Glenwood Springs Resource Management Plan are submitted on behalf of the Public Lands Institute of the Natural Resources Defense Council, Inc. (NRDC). NRDC is a national environmental law and policy organization with a long-standing interest in the wise use and sound management of our public land resources.

The National Wildlife Federation (NWF) also endorses these comments. NWF is the nation's largest conservation organization and is dedicated to the wise use of the country's resources. It has over 4 million members and affiliates in all fifty states.

Before discussing our comments, many of which are critical, we want to commend the team which assembled this document for its professional approach to the planning process. New inventories of public land resources were compiled and the plan contains readable, detailed maps and explanations. This approach contrasts sharply with the recent practices followed by BLM in compiling a Management Framework Plan -- which consisted of one copy, much of it handwritten, scattered in various offices. When found, no one could determine how the MF

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February 2, 1983

Alfred W. Wright, Project Leader
David B. Mensing, Team Leader
Glenwood Springs Resource Area
P.O. Box 1009
Glenwood Springs, Colorado 81602

Dear Messrs. Wright and Mensing:

Enclosed are the comments of the Public Lands Institute of the Natural Resources Defense Council and the National Wildlife Federation on the Draft Environmental Impact Statement on the Glenwood Springs Resource Management Plan. We offer these comments in a constructive attempt to help in implementing and improving the planning system.

We very much appreciate the courtesy of you and the team members in answering our questions and clarifying the issues. We would like to propose a meeting to discuss further the vegetation manipulation and socio-economic impacts and would like to work out a mutually and convenient time and date. Would you be willing to consider that?

As agreed in my telephone conversation on January 28, 1983, with Mr. Mensing, we are mailing these comments on February 2.

Thank you for your consideration of these comments.

Sincerely yours,

Carolyn R. Johnson

Carolyn R. Johnson
Senior Public Lands Specialist

CRJ/km

Enclosure

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applied to on-the-ground management decisions. Often the MFP's were not used or were unusable public documents.

As the first Resource Management Plan anywhere, this document marks an important milestone in BLM's implementation of its planning and management mandates. Unfortunately, the regulations are being changed once again and both BLM and the public will have to start over in obtaining a working familiarity with the regulations. Because this plan will not, therefore, become the model for subsequent plans, we are not presenting comments in the detail we would for such a first, "model" plan.

Although the plan is a decided advance over previous Bureau efforts, it fails to meet existing regulatory and statutory requirements in several significant ways. It contains no discussion or analysis of "critical threshhold levels" for resource use that were established as constraints or cumulative impacts (43 CFR 1601.5-4(a)(9).* There is little evidence that BLM forecast resource demands as a basis for devising these plans, and no standards are offered for monitoring and evaluating the plan's implementation so that the plan can be changed as more information becomes available on its effects (43 CFR 1601.5-2(b)(5)(iv) and 1601.5-9). The document does not evaluate the extent or the reliability of the inventory data on which the plan is based. It includes no implementation plan for the measures that will be adopted. The regulations require that lands be assessed for unsuitability for coal mine development on the 28,520 acres of coal lands in the Resource Management plan (RMP) area (p.22). Most important, the heart of an RMP and the basis for the

* All citations are to the planning regulations published at 44 FR 46386-46401, Aug. 7, 1979.

document is missing -- the specific planning criteria guiding the collection and use of inventory data and information, the analysis of the management situation, the design and formulation of alternatives, and the estimate of effects of alternatives required by the regulations (43 CFR 1601.5-2(a)). Of the two lists of criteria given, one (p. 11) merely repeats the basis for criteria found in the regulations (43 CFR 1601.5-2(b)) and the other (pp. 47-48) is a generalized list for selecting the preferred alternative and does not address most of the requirements of 1601.5-2(a).

We want to point out that wilderness policies of the Bureau have undergone substantial changes and reversals in the last few months since this DEIS was prepared with regard to management, leasing, and areas to be excluded. Thus, through no fault of the District this RMP is based not only on outdated wilderness policies but also on soon-to-be outdated planning regulations. These constant changes make the jobs of BLM employees extremely difficult and exasperating. It makes our job harder too; not only do we have to continually file legal actions but also we can't submit the depth of comments we would like to on the wilderness aspects of this plan. Therefore, we believe that the Final EIS must analyze the wilderness policy changes with regard to the area and the alternatives and allow a period for public comment. A comment period on the Final EIS is described on p. 4, figure 1-2.

Alternatives

Adequate, informed, and productive land management decisions -- and useful public comment on those decisions -- will only occur when the full range of alternatives are analyzed and presented. Indeed, BLM's own regulations require

"several complete, reasonable resource management alternatives" and that "provide a range of choices from those favoring resource protection to those favoring resource production" (43 CFR 1601.5-5). The alternatives presented here do not present a range of choices and are confused as to name, intent, and result, as we describe below. While we do not advocate a magic number of alternatives, more are clearly necessary to achieve a range. By constricting the range and confusing the two choices presented, as this does, then devising an in-between preferred alternative, BLM has short-changed its own goals and failed to consider other reasonable alternatives. Three other possible and reasonable alternatives would be a true resource protection alternative, a low-cost alternative, and a minimum manipulation alternative.

The Alternatives -- General Comments

Each of the proposed alternatives (except No Action and Continuation of Current Management) attempts to solve land-use problems -- such as the conflict between wildlife and livestock for limited forage allocations, and the problem of water scarcity in the area -- by increasing the land's carrying capacity to support competing and often conflicting uses through varying degress of "intense management."

Although the improved management practices and ecological manipulations described in the DEIS may be able to contribute to more efficient, productive use of public lands, the extremely heavy emphasis placed on resolving land-use problems by increasing the area's capacity is an extremely questionable approach to land management. The inherent capacity or potential of land to allow resource use without permanently impairing the resource involved depends, to quote BLM's own definition, "upon a fixed set of conditions which are relatively stable over time,

including...climate, slope, landform soils, and geology." 43 CFR 1601.0-5(8)(n). Thus, although small increases in an area's capacity are likely to be attained without permanently impairing other land uses, the large scale of manipulations proposed by BLM will inevitably involve major trade-offs between competing land uses, such as livestock, water yield, timbering, and ORV use, on one hand; and wildlife, aesthetics, water quality, and the recreation they support, on the other. As a prime example of such trade-offs, each of the alternatives sacrifices aesthetics, recreation, and small and non-game species (which comprise the vast majority of the total wildlife population) by attempting to increase or maintain existing levels of livestock and big game.

Among the more objectionable aspects of the DEIS are:

1. Because the Economic Development Alternative (EDA), Preferred Alternative (PA), and even the Resource Protection Alternative (RPA) all attempt to increase the area's capacity through high levels of "intense management" or manipulation, each alternative would result in significant cumulative adverse impacts on the area's "sensitive" environment (p.82). The PA, for instance, would result in "somewhat intense development" which, combined with the anticipated regional growth, would result in "commensurately higher levels of air pollution" (p. 155); decreased aesthetics (and recreational opportunities) and increases in erosion from mechanical treatments, burning, and road construction and continual maintenance associated with vegetative manipulation and other types of resource management (p. 157, 173); adverse impacts on aquatic habitat (p. 163); a 21% decrease in existing big game populations and an

unspecified long-term decline in habitat conditions for small and non-game species (p. 167).

2. The proposed alternatives would result in many indirect effects which are not clearly added into the assessment of cumulative effects of such "intense management." Vegetative manipulation and timbering and mineral development, for instance, require increased access and fewer restrictions on motor vehicle use, which in turn "create some adverse impacts on the land itself due to resource degradation such as vandalism, littering, and ORV damage caused by increased use" (p. 178; also see water yield comments). Many of these indirect effects would also have social or economic impacts which are not considered (see socio-economic impacts comments).

   Although it may be true that many of these effects are difficult to predict and measure, in economic or other terms, this does not mean they should be omitted from the EIS entirely. The sections on cumulative economic impacts, for instance, add only the economic effects of grazing increases, more timber harvest and smaller big game populations, and ignore the impact of scenic and environmental degradation on tourism and other forms of recreation (hiking, backpacking, rafting, photography, skiing) which form the basis of the area's economy.

3. Closely related to the problem of omission of obvious impacts in the DEIS is the problem of inadequate data to support many of the conclusions the DEIS does reach concerning the impacts of many management actions. For example, the DEIS states that water developments would increase local

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wildlife populations (p. 164) but no supporting evidence is presented.

In addition to failing to meet the data and analysis requirements of 43 CFR 1601.5-2(b)(5), proposed management actions based on inadequate data such as increasing livestock allocations, vegetative manipulation and timbering violate the regulatory requirement that when inventory data on other information is insufficient, BLM's decisions "shall preserve future resource options and avoid irreversible commitments to the degree practicable" 43 CFR 1601.5-2(5)(iv).

4. Equally important, each of the alternatives assumes that all the improvements and manipulations proposed will be carried out, yet the DEIS fails to discuss the amount and source of funding necessary to implement each plan as required by 43 CFR 1601.5-4(4) or the relative cost-effectiveness of proposed actions. By relying heavily on "intense management" to increase the land's capacity to support various land uses, each plan would have to be successfully implemented in full to insure protection of overgrazing lands, wildlife populations and water quality. Benefits gained by vegetative manipulation, for instance, would begin in two years but would not be permanent unless regrowth was controlled. Thus, partial implementation of a plan could be disasterous on wildlife and could increase overgrazing. Therefore, the DEIS should contain detailed, long-term estimates of the cost and commitment of resources needed to be fully implemented in order to assure that all alternatives are realistic in terms of likely fiscal restraints. In addition, since each plan proposes significant expenditures of public funds to improve rangeland

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and increase water yield, a cost-benefit analysis for each alternative would be appropriate. This would allow the cost of range improvements to be carefully weighed against government receipts from grazing fees, and would allow comparison of the relative cost-effectiveness of various alternatives.

Resource Protection Alternative

The Resource Protection Alternative (RPA) contains several major provisions which directly conflict with the high level of resource protection this alternative should offer. The proposed RPA would allow increased timber and fuelwood sales exceeding demand (p. 122); proposes large-scale vegetative manipulation to increase water yield by 6-9% and increase forage for livestock by 50% over existing use (p. 50, 54); and would dispose of 6,790 acres, or 3%, of big game crucial winter reserve (p. 52). These provisions all result in primarily short-term, economic benefits, and contribute little, if any, to the professed goal of this alternative -- the protection of fragile and scarce resources. As a result, the draft RPA fails to give an accurate picture of the optimal level of resource protection which could be easily attained in the GSRA. Disposal of winter reserve and increasing forage for livestock are particularly counterproductive to the goal of increasing wildlife populations. With rapid private development in the area, which is expected to reduce crucial winter reserve 8% over the next ten years, it is imperative that BLM give higher priority to wildlife forage if wildlife populations are to be maintained.

Economic Development Alternative

Similarly, neither is the proposed Economic Development Alternative (EDA) consistent with its professed goal of emphasizing intense management of resources

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contributing to the economic well-being of the area. The proposed EDA subordinates wildlife, which supports a major segment of the areas economy with wildlife based recreation, to livestock production, which represents a "small and declining part of the economy" (p. 76). In effect, the EDA inverts the appropriate priorities for these two competing uses of forage based on their relative contributions to the areas economy. As a result, the proposed EDA would actually result in a slight economic loss to the area, while the RPA would, ironically, yield the greatest positive economic impact (Table 3-28).

Preferred Alternative

Rather than emphasizing a balanced approach to land management, the Preferred Alternative (PA) clearly favors livestock grazing, water yield, timbering and motorized recreation over wildlife, wilderness and other non-motorized types of recreation where they compete. Despite their deficiencies, the RPA and EDA both demonstrate that optimizing wildlife, wilderness and other non-motorized recreation opportunities; and protecting crucial watersheds and water quality are all in the best interest of the GSRA, in terms of both economic development and resource protection. In several instances, however, the PA unexplicably makes a marked departure from major conclusions that can be drawn from the other alternatives.

For example, the PA proposes attempting to improve water quality in only two of the areas with known water problems, rather than managing all four known problem areas as proposed under the EDA and RPA (p. 50-51). Similarily, the EDA and RPA would both place restrictions on ORV use in order to improve erosion hazzard areas, yet the PA proposes continuing ORV use that would prevent conditions in erosion hazzard areas from improving (p. 50-51). Most significantly, the EDA and RPA

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propose that wilderness values be preserved on 10,755 acres and 30,630 acres, respectively, while only 340 acres would be preserved under the PA (pp. 56-57).

Water Yield

The DEIS describes three levels of actions and seven methods to eradicate trees and shrubs so that water runoff would increase (p. 17 and App. A). This eradication is coyly termed "manipulation". The levels range from 34,492 acres of aspen in the Preferred Alternative to 52,362 acres of aspen, conifer, and oakbrush in the Resource Protection Alternative to 104,396 acres of aspen, conifer, oakbrush and sagebrush in the Economic Development Alternative. The methods listed range from clear cutting to herbicide spraying. The process described for aspen is:

> "Initially an experiment would be conducted to determine the actual expected increase in runoff and baseflow from aspen manipulations. Water yield management plans and environmental assessments would then be written for areas shown on Maps 3-4, 3-5, and 3-6" (p. 18).

The first question one logically asks about such proposals is who wants this water yield manipulation? When we posed this question to personnel of the Glenwood Springs BLM Area office, we were told that Union Oil and other oil shale developers requested it. Indeed, the maps (Maps 3-2, 3 and 4) show that one of the largest areas is on the East Fork of Parachute Creek, immediately upstream from the Union oil shale plant and proposed reservoir. Other large areas are located on Castle Peak, Hardscrabble Mountain, and east, southwest, and northwest of Glenwood Springs.

The increased water yields from the three levels are described in specific terms, such as 3-5 inches per year for patch-cutting of aspens (pp. 109, 134, and 159). This specificity does not appear to be supported by the state of the art. The DEIS cites Hibbert's 1977 publication as a basis. However, the preliminary

and sketchy field work performed on increasing water yield from aspen patch-cutting do not appear to support BLM's devising a plan granting authority to use the technique on such a large scale. Hibbert's report* (p. 11) presents no independently obtained results, instead it cites to DeByle's 1976 publication.** Similarly, DeByle cites Johnston's work. In checking Johnston's publications, we found that his 1969 publication describes (Robert S. Johnston, "Aspen Sprout Production and Water Use," USDA Research Note INT-89, 1969) a research project conducted for five years on one small fenced aspen grove in Utah. No grazing was allowed.

In contrast, BLM proposes to allow grazing in the "manipulation" areas (compare Maps 3-2, -3, and 4 with 3-14). Indeed BLM contends that in addition to increased water yields, the manipulation will improve grazing and carrying capacity of the range and grazing would be allowed on the land two years after "treatment" (p. 118). Nowhere does BLM describe the length of the initial experiment (p. 18), the conditions under which it would be performed, or the criteria by which it would be judged a failure or success. In addition, BLM does not analyze the management alternatives, objectives and techniques that be will considered if the experiment indicates the technique cannot be used on the scale now proposed in the DEIS. It is in these situations (the potential for experimental failure) that the planning regulations require BLM to make a worse case analysis and predict the probability of occurrence (43 CFR 1601.5-2(b)(5)(iv)).

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* Hibbert, Alden R., "Managing Vegetation to Increase Flow in the Colorado River Basin," General Technical Report RM-66, Rocky Mountain Forest and Range Experiment Station, U.S. Forest Service, 1976.

** DeByle, Norbert V., "The Aspen Forest After Harvest," paper presented at Utilization and Marketing as took for Aspen Management in the Rocky Mountains, Ft. Collins, Colorado, September 8-9, 1976.

Of major concern are the inadequately analyzed and ignored impacts from the water yield proposals. For example, although herbicides are listed in Appendix A as one method for vegetative manipulation, we have been unable to find any discussion of what types of herbicides would be used; what the decay products would be; the application conditions and controls; the qualifications of the persons applying the herbicides; the impacts of the herbicides on water and air quality, genetic mutations, disease susceptibility and death rates of humans and aquatic and terrestrial wildlife. As recently as 1977, the Craig, Colorado, District BLM office has advocated and used the "Agent Orange" herbicide in water yield and range improvement programs on the public lands approved under the Management Framework Planning System.*

Other impacts also inadequately analyzed or ignored are the costs of the initial eradication or "manipulation" and the costs and frequency of maintaining the conversion of trees and shrubs to grasses after the initial treatment. Aspens, for example, when patch-cut, sprout prolifically from the roots of nearby trees and the clearings soon return to aspen groves. Without maintenance, the presumed water yield increases will taper off, and the result is either a long-term maintenance program or a short-term water yield increase. The road or access construction necessary for access to the sites is largely overlooked in the analysis of impacts. The large increase in sediments after mechanical eradication is attributed to this disturbance.**

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* Marvin Pearson, former Craig District Manager, numerous oral communications with Carolyn R. Johnson, 1976-1978.

** U.S. Forest Service field inspection of the Fraser Experimental Forest for Conservationists, Aug. 2-3, 1982. File Report of Frances Green, National Wildlife Federation.

Additional concerns overlooked or casually dismissed are the instigation of a water conservation program instead of attempting to increase supplies. No analysis is performed of the effects of vegetation eradication and conversion for increasing water yield on habitat and population dynamics of non-game mammals and birds. The implicit assumption in the DEIS is that they will conveniently move to accommodate this program and no long-term impacts will result. This assumption relies on the false "vacuum in nature" theory; that is, that the carrying capacity has not been reached and there are vacancies, "for rent," spaces, in which these displaced animals can live. No analysis is presented to support the statement in the DEIS that "the small amount of aspen" removed "would reduce the significance of these impacts" (p. 165). In fact, the DEIS uses the identical two paragraphs to describe the impacts on terrestrial wildlife for all three action alternatives (pp. 115, 140, 165), yet the acreage affected ranges from 34,492 acres to 104,396 acres, and the DEIS admits that at least the aspen groves provide essential non-game habitat.

Appendix A (p. 188) describes BLM's proposal to increase water yield in mixed conifer forests by cutting openings in the trees so more snow will accumulate on the ground and melt slowly. This proposal appears to be based at least partially on work done at the U.S. Forest Service's Fraser Experimental Forest near Fraser, Colorado. The misconceptions inherent in and limited applicability of that work, particularly in mixed conifer forests under different climatic conditions, is described by a study performed by James R. Guadagno. We have attached a synopsis of that work to be incorporated in these comments.

Socio-Economic Impacts

In formulating an appropriate resource management plan for the Glenwood Springs Resource Area, BLM should bear in mind that the area will undergo rapid growth and change over the next couple of decades. Continued growth of the tourism/recreation industry, combined with potential large-scale oil shale development, will increase the population of the area by 40-80% in the next twenty years (p. 76). Increased population and development will have two easily predictable effects -- increased demand for the outstanding visual and recreational resources of the area, as well as a deterioration of these resources from increased development on private lands. The scenic backdrops, wide array of outdoor recreational opportunities, clean air, and lack of industrial development create an unusually high quality of life in the resource area, which is extremely important from the standpoint of the psychological health of residents and visitors, as well as an economic standpoint because of the area's heavy reliance on recreation/tourism. Consequently, the general effect of any plan for management of the large amount of public lands in the area should emphasize low development to balance rapid, less-controlled private development and should protect the extraordinary scenic and recreational resources upon which the area's high quality of life and economic livelihood are based.

The description of the present status and trends of the resource area in Chapter 4 indicates that the scenic resources and quality of life are extraordinarily sensitive to development impacts and that deterioration of many of the area's vital resources is already occurring. For example, the DEIS notes that, already "increased pressure is being placed on visual resources as a result of energy-related projects (and other developments) and the housing, utilities, and

transportation needs associated with them", and that "public concern is also increasing about protecting visual quality for open space and scenic backgrounds for residential purposes and recreational uses" (p. 82). Particulate air quality is already poor in many parts of the area at times, according to the DEIS, due to natural conditions present combined with large influxes of people, automobiles, and fireplace usage during peak recreational seasons (p. 62). Wildlife habitat is continually shrinking from land and energy development, with crucial winter range expected to decrease 8 percent over the next ten years due to development on private lands, placing wildlife in increased competition with livestock on lands where significant overgrazing already occurs.

At the same time, demand for use of scenic and recreational uses of public lands is significantly increasing. BLM notes that public land users prefer primitive and semi-primitive non-motorized Recreational Opportunity Spectrum (ROS) classes (p. 85) and place unusually high emphasis on the visual resources of the GSRA (p. 81). As population increases from 40-80%, demand for these resources will undoubtedly increase at least proportionately. In fact, the scenic and recreational opportunities of the area create a unique quality of life which is the primary reason for many existing and future residents choosing to live in the area. In one case, as the Wilderness Suitability Analysis notes, "support for wilderness designation tends to come from younger residents, more recent arrivals to the area and residents in the resort areas" (p. 27). Thus, as the population swells with new arrivals drawn to the resource area because of its beauty and recreational resources, and its economy becomes even more dependent on recreation/tourism, the demand for and value placed on resource protection is likely to increase significantly.

In view of these acknowledged trends -- increasing deterioration of the area's scenic and recreational resources from private development, and increasing demand on these same resources -- the management of public lands in the area should heavily emphasize protection of resources and the quality of life, which are vitally important to the social well-being and economic vitality of the area. Discussion of such socio-economic considerations is clearly mandated by BLM policy, which requires resource management plans to attempt "to achieve integrated consideration of physical, biological, economic, social and other sciences, and the environmental design arts"; and to consider "the relative significance of the public land...uses to local economies", "present and potential uses of public lands", "impact on uses of adjacent or nearby non-federal lands", and the "long-term benefits and detriments to the public," of proposed actions (43 CFR 1601.0-8(b), (d), (f), (g), (i)). However, all the alternatives in the DEIS contain little or no analysis of how impacts on the physical resources of the area will affect the "social well-being and quality of life". Discussion of socio-economic impacts is limited almost entirely to impacts on local ranching operations which constitute an extremely small portion of the population and economy, and the DEIS briefly concludes that "social well-being and quality of life are unlikely to be significantly effected" under the EDA and the PA (p. 175), while "social well-being and quality of life would most likely be affected (adversely or beneficially?) under the livestock grazing management proposals" in the RPA (p. 127). These brief conclusions are entirely unsupported in the DEIS and are directly contradicted by statements elsewhere in the document which indicate that all the proposed RMP's would have significant, usually negative, socio-economic impacts:

1. The "somewhat intense" development proposed under the EDA and PA and "anticipated regional growth and energy minerals development would result in commensurately higher levels of air pollution" (p. 155).

In addition to the considerable socio-economic value to the area of high air quality, BLM must consider the impact of decreased air quality on three adjacent Class I air quality areas -- Flattops, Eagles Nest, and Maroon Bells/Snowmass Wilderness Areas -- as required by 43 CFR 1601.0-8(j) and 1601.4-3(a). Strict limitations exist on additional amounts of pollution allowable in these areas. Although the DEIS acknowledges that "BLM must consider these limitations when air quality impacts are anticipated from proposed actions" (p. 63), the document contains no data or analysis of this limitation on allowable air quality impacts.

2. *The highly-valued visual resources of the area would also decrease* commensurately under the EDA and PA as a result of moderate to high levels of development on public lands combined with a high level of private development. The DEIS notes that "cultural modifications" associated with development -- such as power lines, gravel pits, mines, communications sites, ORV use areas and dump sites -- have already depreciated scenic quality. However, the DEIS fails to include the additional impact of increased "cultural modifications" in any section under the PA and EDA.

Additionally, under the PA, 45,332 acres of tentative VRM Class II would be changed to Class III and managed under less restrictive objectives. The impact of these changes would be particularly adverse on a large number of people because the downgraded area is precisely adjacent to where the greater part of any additional growth will occur near the towns of Eagle and Parachute or Rifle (p. 76 and Map 3-31).

The visual deterioration in the Parachute Creek and Rifle regions would also be compounded by serious air quality impacts due to oil shale development (p. 63). In addition to deterioration from timber harvesting and vegetative manipulation, visual quality of these areas could be further degraded to an unknown degree, since any future proposals would be subject to less restrictive objectives (p. 178).

3. The transportation management plan proposed in the EDA and PA would also create impacts which would significantly affect the social well-being and quality of life. The greater access and 43 to 83 miles of additional roads proposed under the EDA and PA, would "create some adverse impacts on the land itself due to *resource degradation such as vandalism, littering, and ORV damage caused by increased* use" (p. 178), according to the section on transportation impacts. However, like many other impacts that would clearly affect the social well-being, quality of life, and possibly even the economic well-being of the area, the adverse impacts from the transportation plan in the EDA and PA are not considered in the brief section on social and economic impacts.

Grazing

The emphasis on maintaining or increasing existing levels of livestock grazing in the DEIS is particularly objectionable in view of the wealth of information presented indicating that livestock production can be increased only at the expense of the more important economic and ecological considerations.

It is obvious, first of all, that the existing level of grazing is causing or contributing to environmental degradation. About half, or 128, of 253 allotments are being overgrazed (p. 57); overgrazing is a primary cause of erosion in the area (p. 63); "substantial portions" of the resource area are in static and downward ecological trends (p. 72); riparian vegetation and aquatic habitat, primarily on

the Naval Oil Shale Reserve is "declining significantly," and would improve "significantly" if grazing were decreased (p. 53); and shortening livestock grazing on summer, high winter, and crucial winter range would reduce competition between livestock and big game for browse, resulting in less winter mortality and better fawn and calf survival (p. 165).

Secondly, livestock represents a "small and declining part of the economy," which BLM virtually conceeds it cannot substantially revitalize (p. 76). The only justification given concerning the proposed increase in livestock under the PA is "because ranchers feel existing use is too low and BLM feels total preference would be too high, active preference was selected as the objective" (p. 46).

Although ranching admittedly retains an important role in the area -- supporting long-time residents, giving the area the rural western character that attracts tourists, and providing a buffer between resort areas and energy development -- the 167 ranch operators using BLM lands rely on this range for an average of only 7% of their total forage needs (p. 76). Moreover, the adverse impacts of grazing reductions or adjustments would be mitigated by several factors. First, the 17% reductions proposed under the RPA would represent only 1.19% of total forage needs (7% of 17%). Secondly, no reductions would occur until monitoring has taken place, according to the DEIS, providing a transition period during which alternative forage could be arranged (p. 125).

In addition, although grazing reductions could significantly affect a number of ranches, which are smaller and more dependent on forage from public lands, we would like to point out that overgrazing is clearly not in the long-term interest of any ranching operation because sustained livestock production is ultimately dependent on the ecological health of rangeland. Most of the measures taken to

reliability of predicted forage increases for both wildlife and livestock, no "critical threshhold levels" for wildlife forage or population are set to protect wildlife from shortages of forage (43 CFR 1601.5-4(a)(9)).

Furthermore, although the RPA, EDA and PA all predicate increase forage on large increases in management actions, the DEIS contains no cost estimates or cost-benefit analysis by which to evaluate the fiscal feasibility and relative cost-effectiveness of each alternative (43 CFR 1601.5-4(a)(4)).

The fact that even the RPA calls for only a short-term 17% decrease in livestock grazing (when 128 of 253 allotments are admittedly overgrazed already) followed by a 50% increase in livestock allotments suggests it is BLM's intention to increase or at least maintain livestock grazing regardless of the environmental impacts or economic trade-offs.

In sum, we would like to express our deep concern over the extremely high priority livestock is given in the DEIS without analyzing the serious ecological complications and trade-offs involved.

In conclusion, we commend the team for a fine first-cut approach to resource management planning. In these comments we have identified several methods and issues on which we recommend substantial revision and further analysis. We look forward to working with BLM in this process.

Sincerely yours,

Carolyn R. Johnson

Carolyn R. Johnson
Senior Public Lands Specialist

Eric Hildebrandt

Eric Hildebrandt
Intern, Policy Analyses

increase forage for livestock will be made directly or indirectly at the expense of wildlife (including species other than big game), aesthetics, soil and water quality, which are ecologically and economically important to agriculture at well as recreation/tourism. As noted in the comments on water yield, vegetative manipulation is likely to involve many more adverse environmental impacts than are noted in the DEIS: significant soil erosion and water quality degradation may occur, one ecosystem supporting many kinds of wildlife is replaced by another designed to support primarily livestock, and continual maintenance (and degradation) is necessary to control regrowth.

Just as importantly, the proposals to increase livestock forage, like proposed water yield projects, also lack adequate supporting data or analysis to indicate that they are feasible and would not result in additional adverse impacts (43 CFR 1601.5-6 and 40 CFR 1502.16). First, the document does not contain enough site specific information on such factors as the grazing capacity under current conditions, the suitability of allotments for grazing, nor is there even an explanation of why this information is missing (43 CFR 1601.5-2(b)(5)(i), (ii), (iii)). The DEIS is not specific about what BLM is proposing to do about the existing situation except for vegetative manipulation and classification. The DEIS specifies limited changes in livestock grazing during big game crucial use periods (p. 24) but is unclear about other changes in the grazing system (p. 167). Although estimates are given of the total acres upon which vegetative manipulation would occur under each alternative, there is no mention of the specific type and degree of the management practices (outlined in Appendix A) which are assumed to contribute to increased grazing capacity.

Despite the uncertainty this lack of information creates concerning the

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February 1, 1983

Mr. Alfred Wright, Area Manager
Glenwood Springs Resource Area
Bureau of Land Management
P.O. Box 1009
Glenwood Springs, Colorado 81602

Dear Mr. Wright:

We appreciate this opportunity to comment on the RMP/DEIS and on the Technical Supplement on wilderness for the Glenwood Springs Resource Area. You will find our comments enclosed with this letter.

In reviewing the RMP/DEIS, we are concerned by the Preferred Alternative's unexplained emphasis on commodity development and motorized recreation, to the detriment of environmental and economic values of greater importance to the community. This over-emphasis on development is unsupported by the analyses in either the Resource Protection Alternative or the Economic Development Alternative, and is, in our view, inappropriate and unwarranted.

The long-term well being of the Glenwood Springs region will come from the wise management of its air, water, wildlife, and wilderness resources, and from a balanced, recreation-based economy. None of these goals is reflected in the Preferred Alternative. In promoting motorized recreation, timber and minerals development, and water yield, the BLM is actually undercutting the resource values on which the community is most dependent: its lucrative wildlife resource, its dwindling non-motorized recreation opportunities, and the long-term viability of its ecosystem.

We wish to express wholehearted support for the Resource Protection Alternative, which we feel recognizes the economic as well as ecological importance of conserving the region's natural heritage. We strongly endorse wilderness recommendations for all four WSA's, which represent the only 4% of BLM's holdings in the area which remain pristine and available for wilderness recreation.

In not recommending any but a token amount of acreage for wilderness, the BLM has failed to acknowledge that, without the permanent protection of wilderness status, there could soon be no wild lands left in the Resource Area.

We strongly urge the BLM to reconsider its decision, and to choose the Resource Protection Alternative.

Sincerely yours,

Rosalind McClellan
Colorado Wilderness Network

Mark Pearson
Colorado Open Space Council

Michael D. Scott
The Wilderness Society

Kirk Cunningham
Rocky Mountain Chapter,
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Denise Dralle
University of Colorado
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enclosure

cc: The Honorable Ray Kogovsek
Mr. George Francis, State Director, BLM

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whereas the EDA proposes that 13,225 acres be closed to mining location, and 19,083 acres be closed to oil and gas leasing, the PA recommends that only 2,810 acres each be closed to these two activities. What were apparently considered adequate amounts of land for minerals development in the EDA are substantially increased in the PA.

Wilderness acreage, which was already cut from 30,630 acres in the Resource Protection Alternative (RPA) to 10,755 acres in the EDA, has been reduced to only a token 340 acres in the PA. Even that was recently dropped by Secretary of Interior Watt's action to eliminate areas of less than 5,000 acres, leaving the Glenwood Springs Resource Area (GSRA) with no wilderness recommendations at all.

Most perplexing of all, the PA proposes a decline in big game populations, which will reduce by one million dollars revenues to the local community derived from hunting (p. 57).

Some resource management levels have been adjusted for the better in the PA; fewer lands have been identified for disposal. Proposed ORV closures are larger, roading mileage smaller (pp. 58-59), and livestock grazing levels slightly less ambitious in the EDA, possibly in response to projected cutbacks in funding for these types of resource management activities.

However, the PA's unexplained shifts in the areas of minerals, wilderness, and wildlife seem unrelated to the previous alternatives. NEPA regulations state that a DEIS is a decision-making document (40 CFR 1502.1), and that "alternatives should provide a clear basis for choice" (40 CFR 1502.14).

The PA departs so dramatically in some areas from the alternatives formulated through years of BLM planning and public involvement, that we question whether the RPA and the EDA did, in fact, provide a basis for choice. Does a preferred alternative so at variance with the preliminary alternatives still fulfill the NEPA requirements? The result is a preferred alternative more in line with a commodity emphasis, but which ignores the needs of the local economy and ecology.

In its emphasis on timber and mineral development, the PA flies in the face of regional economic trends favoring recreation and tourism. The Glenwood Springs BLM would better serve the community by choosing management options designed to promote the educational, scientific, and recreational uses of its resources rather than focussing so heavily on development activities. The BLM has put itself in the position of promoting economically insignificant resources at the expense of economically important resources.

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COLORADO WILDERNESS NETWORK

COMMENTS ON THE RESOURCE MANAGEMENT PLAN AND
WILDERNESS DRAFT ENVIRONMENTAL IMPACT STATEMENT
FOR GLENWOOD SPRINGS RESOURCE AREA

The Glenwood Springs Resource Management Plan (RMP) is among the first five to be released in the nation. In the thoroughness of its analysis, the wealth of its data base, and detailed format, it sets high standards for future RMP's in Colorado.

Exceptions to this are the economic sections of the DEIS, which fail to give the reviewer accessible, in-depth data from which to assess the economic consequences of the various alternatives. Rather than being relegated to rudimentary tables scattered among the back pages, cost/benefit figures for each resource need to be included in both the initial Summary and in the Comparative Analysis (pp. 48-59.*) More important, the final RMP and Wilderness EIS need to include a full scale cost/benefit table, showing the economic trade-offs for each resource under each alternative.

In general, however, the Glenwood Springs Planning Team is to be commended for examining all possible uses for each portion of its Resource Area before settling on any one management option, and for the array of administrative protections assigned to sensitives areas -- such as off-road vehicle closures, no surface occupancy stipulations, visual resource management, semi-primitive, non-motorized recreation classifications, ACEC designations, and unsuitable for utilities zoning. Also appreciated are the attention given to cultural resources, the separate document on wilderness, and the maps and charts which help clarify this complex material. Such detailed analysis we may not expect to see in future RMP's if budget cuts and regulatory "streamlining" continue.

Among the best aspects of the Resource Management Plan (RMP) is the use of two alternatives, one emphasizing resource protection and one emphasizing economic development as tools to help both the public and the agency arrive at balanced management decisions. These carefully thought-out alternatives were presented to the public for review at open houses six months prior to the release of the DEIS, with the understanding that they represented two ends of a spectrum and that wise management would fall somewhere between the two.

It was, therefore, disconcerting to discover that not only does the Preferred Alternative (PA) fail in many respects to strike this balance, but in some areas it goes even further than the Economic Development Alternative (EDA) in its development emphasis. Most notable are its substantial reductions in wilderness, wildlife levels, and lands closed to mineral development. For example,

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Critical to the viability of the regional economy is the income derived from hunting and other non-motorized recreation. Yet both the EDA and the PA propose levels of timber harvest, minerals extraction, water yield, ORV use, and grazing which will directly undercut this economic base. Page 76 states that, of the 47 largest employers in the region, 34 are tourist/recreation related and only four are related to manufacuting and commodity production. Page 77 shows that 56.6% of the regional employment comes from activities directly related to tourism.

Nevertheless, the PA proposes development which will cause a loss of $1,228,000 in personal income (p. 175), as compared to the RPA, whose emphasis on wildlife and wilderness management will result in an increase in personal income of over one million dollars.

In light of these decisions, it is not surprising that local residents, testifying in December 1982 public hearings, questioned the wisdom of allowing so large a decline in big game populations, which provide income during the critical off-season.

SPECIFIC COMMENTS ON THE RESOURCE MANAGEMENT PLAN DEIS

Visual Resource Management (VRM)

1. Deep Creek, Thompson Creek, and Bull Gulch are proposed for VRM Class I in both the RPA and the EDA. No areas are proposed for Class I VRM management in the PA, despite the importance of the community's scenic qualities to its economic base and quality of life. This would seem to be an unjustified concession to the timber and minerals interests, which is not conducive to the best interests of the community.

2. The highly visible Rifle Gap Reservoir is currently reserved to coal development, but should be declared unsuitable for surface occupany to preserve its visual qualities.

3. No provisions are made in the PA to protect Castle Peak WSA's Class A scenery in the event of no wilderness designation.

Water Quality and Yield

1. The PA proposes water quality improvements for only two problem areas, leaving out two more which are proposed for improvement in both of the other two alternatives.

2. The PA's ORV restriction on 166,000 acres is higher than that of the other two alternatives, and would have favorable impacts on water quality.

3. The PA downplays the cumulative impacts on water quality of its combined timber, minerals, roading, ORV, water yield and livestock management plans.

4. Critical watersheds and erosion hazard areas are not adequately protected from development. For example, the Debris Flow Hazard Zone northwest of Glenwood Springs and the Elk Creek Municipal watersheds shown in Map 3-5 are not exempt from oil and gas subsurface leasing, roading, ORV's (map 3-37), utilities and communications facilities (3-44), and grazing projects.

5. Increased soil loss and sedimentation which will result from the PA's proposal to increase water yield, will interfere with its goal of improved water quality. The PA's proposed water yield levels constitute only a fraction of normal water level variations in the region. This marginal advantage fails to outweigh the adverse impacts of water yield projects on soils, wildlife habitat, and water quality.

6. More sensible are the water yield increases of from 6,900 to 9,100 acre-feet per year (p. 50) described in the RPA.

WILDLIFE

1. The PA specifies three fewer sites for the re-introduction of peregrine falcon than even the EDA recommended.

2. The PA drops the RPA's plan to introduce big horn sheep into the Government Creek area. The RPA's big horn sheep introduction plan should be adopted in the final RMP, and with it, a clarification as to how it would be accomplished in an area which is identified on Map 3-9 for coal management. In dropping the introduction site indicated in the RPA (Map 3-11), the BLM is denying the Colorado Division of Wildlife's request for this site as a transplant area. This site has been CDOW's #1 priority for such a program in its northwest region since 1979, and we are disappointed that, after stalling on CDOW's repeated requests, the BLM has apparently made its refusal final. Big horn sheep range has suffered severe restrictions in the last 70 years of fire control practices, and new range is badly needed. No other potential range has been identified in the Glenwood Springs area. The loss of this site will be a loss to the immediate community, as well as to the State as a whole.

3. According to the PA, only a few streams will be managed to improve wildlife conditions, as opposed to both the RPA and the EDA, which recommend improvements for "most below-average lakes and public lands in the resource area" (pp. x-xii).

4. The RDA-recommended big game population increases come closer to meeting the CDOW goals than those of the PA.

5. The PA proposes a 7% decline in big game populations (p. 53), and a resulting loss of $1 million in personal income. The RPA recommends a 20% increase in those populations, with a corresponding increase of $1 million in personal income.

LIVESTOCK

1. The Colorado Wilderness Network recognizes the importance of the ranching sector of the Glenwood Springs regional economy which, despite its decline relative to other sectors, is important as an agent of historic continuity and in maintaining the region's quality of life. Although only 7% of the area's livestock forage is actually located on BLM lands, efforts should be made to keep livestock grazing at existing levels.

   Achieving this goal could be done without resorting to the range management programs on the scale outlined in all three alternatives. Much of the existing range has been overgrazed by both livestock and wildlife: 30% is in poor condition and only 9% is in good condition (p. 72). This fact, and the high cost of range improvements compared with grazing fee revenues, suggest a negative cost/benefit ratio for any kind of range improvement program.

   For these reasons, and because of the dubious advantage (to soils, wildlife diversity, etc.) of large scale vegetative manipulation, the Colorado Wilderness Network recommends a range improvement program considerably more modest than those of any of the alternatives. No more than slight increases in livestock and wildlife are needed for economic stability, while reduced forage production goals would, in our opinion, represent a more plausible "Resource Protection Alternative."

   Of the three alternatives, the RPA is preferable because it is ecologically more sound, and because it will result in the greatest long-term benefits to both livestock and wildlife. According to the RPA, AUM's will be reduced, initially, by 17%, presumably in order to reduce overgraving and better ensure the success of the range improvement program.

   Although this could increase economic hardship to ranchers in the short-term, only 7% of the Resource Area's grazing lands will be affected, and it is probably the only way to ensure long-term viability of BLM grazing lands. In addition, the long-term result will be a 50% increase in forage production, which will benefit the region's lucrative wildlife resource as well as its livestock.

   The PA's recommended 3% initial increase in AUM's will exacerbate existing deterioration in range conditions and will produce increases in forage of only 37%.

   Adverse impacts on grazing could also be reduced by adopting the RPA's land disposal projections. According to the RPA's land disposal program, only 1,026 AUM's will be lost, rather than 2,268 AUM's if the PA's land disposal plans are instituted.

FOREST MANAGEMENT

The PA's decision to harvest timber only on slopes of less than 40% is a wise one. We suggest that it should become an established policy for ecologic reasons (soil erosion, etc.), and not just because high-cost logging techniques are not available in the region (p. 28) or because poor market conditions temporarily make timber on these slopes uneconomical to harvest (p. 73).

The economic benefits to be derived from the higher timber harvest level recommended in the PA are only marginal and easily offset by the ecologic and economic benefits of the lower timber harvest level proposed by the RPA.

Tables on pp. 127 and 175 displaying increases in personal income levels due to different forest management options show a projected increase of from $174,000 to $398,000 in the RPA, and an increase of $337,000 in the PA. These figures do not show a significant difference, and both are dwarfed by the loss of $1.6 million in personal income which will result from the PA's projected decline in wildlife (Table, p. 175). Also, the DEIS points out that much of the increase in personal income and employment would take place outside the Resource Area (p. 126).

Also marginal is the difference in the contribution of each alternative's timber harvest level to regional capacity and demand. The White River National Forest's sawtimber capacity is 100 MMBF, at a minimum[1], to which the RPA's timber harvest levels of .7 MMBF and the PA's timber projection of 1.8 MMBF would contribute only .07% and 1.8%, respectively. Similarly, the contributions of the two alternatives to regional saw timber demand are only 5% and 10%, respectively. The White River National Forest's capacity so far exceeds demand that all of the GSRA's timber could remain unharvested and never be missed, let alone the small amount of timber recommended in the PA.

Compare these marginal differences in the economic consequences of the two proposed timber harvest levels with their on-the-ground impacts. The PA recommended intensive timber management for 17,905 acres rather than the 7,175 acres recommended in the RPA. Under the PA, more than twice as much acreage will suffer the effects of timbering on soils, water quality, wildlife species diversity and habitat, visual resources, critical elk calving grounds, and non-motorized recreational values.

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[1]According to John McCarthy, Forester, WRNF.

Since the timber harvest levels of the RPA provide almost the same economic benefits as the PA, while at the same time preserving more of the Resource Area's ecological and economic base, the larger timber harvest goals in the PA are not justified.

The amount of fuelwood harvest proposed in the PA may also be too high, considering that a growing woodsmoke pollution problem in the region may eventually cause a tapering off of demand for fuelwood. Also, the soil impacts from harvesting fuelwood are worse than those from harvesting sawtimber, according to the DEIS.

To aid the public in assessing proposed timber goals, the final RMP should include a detailed cost-benefit analysis, which includes not only anticipated revenues to the community and to the Federal Treasury, but estimated management costs of the various harvest goals. Considering the high cost of building roads, and possible future Forest Service budget cutbacks, it may be more economical to restrict logging to already-roaded areas, until and unless future demand justifies the roading of new areas.

Also, the final RMP should clarify why 1.8 MMBF is deemed adequate to meet local timber demand on p. 171, while only .7 MMBF is apparently considered adequate for the same demand on p. 73.

LAND TENURE PROGRAM

The Glenwood Springs BLM's Land Tenure Program, as described in the PA, would dispose of 23,254 acres of BLM land, about half by sales which would represent a net loss to BLM's resource base. Only one quarter of this (4,320 acres) is in the urban or semi-urban categories and can therefore be justified on the basis of benefitting the local communities.

Much of the rest of these lands are not small, isolated urban parcels whose sale might be justified for manageability reasons, but rather moderate-sized parcels containing range, timber, and wildlife resources of considerable importance to the community.

Section 203 of FLPMA states that public lands can be sold in order

> to serve important public objectives, including . . . expansion of communities and economic development . . . which outweigh other public objectives [such as] recreation and scenic values which would be served by maintaining such tracts in public ownership. [Emphasis added.]

Nothing in this section justifies land sales for the purpose of balancing the federal budget. Only overriding public interest can justify either the exchange or sale of public lands. Is the sale of up to 23,000 acres of public land in the Glenwood Springs Resource Area, in order to bolster the Federal Treasury by an infinitesimal fraction of one percent, to be considered in the public interest? The public objectives to be served by land sales and exchanges, as defined by FLPMA, have to do not with balancing the federal budget, but with economic, recreational, and scenic advantages primarily to local communities. These are the very assets which the BLM's land disposal program most jeopardizes.

Land prices will go down. Federal payments to the county will be lowered. The increased private land base will increase administrative costs to local jurisdictions. Worst of all, 14,730 acres (or 6%) of the RA's crucial big game winter range will be lost. Along with loss of habitat due to private land development, this will cause a 21% decline in big game, and a corresponding decrease in hunting revenues critical to the local economy.

Manageability is a commendable goal of the land disposal program, but it is better accomplished by exchanges than by land sales, so that the BLM can maintain its overall resource base. Wildlife habitat and other natural resources are better managed by the BLM than by the private sector, a fact apparently agreed to, even by some local governments (p. 39). The public interest, both local and national, is ill-served by this blatant give-away of a natural heritage belonging to all Americans.

The land disposal program would be better framed as the Land Acquisition Program. Its focus should be the identification not of lands for disposal, but of lands whose acquisition (by exchange) would improve the consolidation and manageability of resource-rich BLM lands. Local residents and land owners should look twice at a program which will lower land values and threaten an important economic resource in order to draw more dollars into the insatiable Federal deficit.

Regarding exchanges, we recommend that lands with significant resource values be identified specifically for exchange, rather than for sale. Also, we would like to have more information on the larger, more valuable parcels up for disposal in order to comment on their disposition. More information should be made available for public review on detailed aspects of the program, such as fair market value, who gets the first chance to buy tracts, and whether state or local approval will be required for sale.

The Land Tenure Program may qualify as a major federal action under the National Environmental Protection Act (NEPA), and as such may require a full-scale Environmental Assessment.

CONCLUSION

In conclusion, the Colorado Wilderness Network feels that the best interest of the Glenwood Springs region, and Colorado as a whole, would be better served by the Resource Development Alternative than by the Preferred Alternative. The development emphasis of the PA is too extreme in certain areas, and unsupported by anything in the text. We find it perplexing that the BLM has recommended an alternative whose adverse impacts to the region's soils, water, scenery, wildlife, wilderness, and the local economy, will be worse even than those of the Economic Development Alternative.

The RPA, while erring still on the side of development, represents, on balance, a wise plan for the sound management of the region's natural resources over the long term, and is the best way to promote local economic stability.

WILDERNESS RECOMMENDATIONS

The Glenwood Springs BLM's failure to recommend virtually any wilderness is not only disappointing, but appears arbitary and capricious given public and agency support for Bull Gulch, which was evident at the May 1982 open houses.

All four of the Resource Area's WSA's, taken together, constitute 30,360 acres, only 4% of the overall RA land area (p. 61, DEIS). This 4% is the only land left in the 1.2 million acre Resource Area which remains roadless, essentially natural, and which can still provide opportunities for solitude and primitive recreation. A region where the population has more than doubled in the last 20 years and urbanization is rapidly encroaching on open space cannot afford to lose its remaining 4% of wilderness.

The value of a resource can be measured by its scarcity relative to demand. By this definition, wilderness is perhaps the most valuable resource currently under consideration by the BLM. Not only is wilderness scarce, but, as the Technical Supplement pointed out, visitor preference for the wilderness setting is high. Increasingly heavy use in the nearby Flattops and Eagle's Nest Wildernesses point to a demand for additional wilderness in the area.

The PA's emphasis on motorized recreation seems inappropriate considering that 30 times more land in the RA is devoted to motorized recreation than to non-motorized (p. 31). With four ski areas existing or planned for the region, and 80% of the RA open to ORV use (Table 3-16, p. 31), it is difficult to understand the need to put roads into the few roadless areas which still remain.

The failure to recommend any but a token amount of wilderness runs counter to the best interests, both actual and perceived, of the local community. In economic terms, a non-wilderness recommendation for Castle Peak, Bull Gulch, and Hack Lake will lead to a decline in the wildlife, visual, and other wilderness values of these areas. This, in turn, will adversely affect a major portion of the local economy, hunting, and non-motorized recreation.

Despite the Supplement's repeated assertion that "an apparent majority [of local residents] is opposed to wilderness designation," public opinion expressed in public comments and at the May 1982 open houses was clearly on the side of wilderness. Pitkin County has expressed strong support for wilderness recommendations for all three areas. At BLM hearings in Glenwood Springs, Grand Junction, and Denver, wilderness supporters outnumbered those opposed by ratios of roughly 19:1, 17:1, and 16:1, respectively.

BLM's unsupported statement that a majority of residents oppose wilderness should be either documented in or removed from the final EIS.

BLM further states that what wilderness support there is comes from "younger residents, more recent arrivals, and residents in the resort area" (pp. 10, 27, 53, 78, Technical Supplement), without acknowledging that these do, in fact, constitute the majority of the local population.

According to Table 4-13, p. 75, of the DEIS, less than half of the population of the tri-county region lived there 20 years ago, and the ratio of newer to older residents gets larger each year. Recommending only 4% of the RA as wilderness in deference to this clear majority does not seem to be an entirely unreasonable gesture.

The Supplement gives short shrift to the 1981 Walsh-Loomis Study of wilderness economics, stating on p. 4 that it covers too large a scale to be locally relevant. However, a survey of local preferences using the same format, but scaled down to a regional sample, is feasible, according to John Loomis, one of its authors. We recommend that the BLM conduct such a study before making its final wilderness recommendations, in order to provide a more accurate reading of public opinion than what is currently available.

Current, regional needs for wilderness are only one part of a picture in which BLM needs to evaluate long-term, national needs for wilderness, as well. Over half of Colorado's wilderness visitors are from out of the state, as Colorado's wilderness areas come to be seen as a national (and even international) resource!

Short of doing a Harris poll, it seems safe to guess that a majority of Americans would not look favorably upon the BLM's plans to leave open its last remnants of pristine land for roads, timbering, minerals development and ORV use.

Section 202 of FLPMA mandates that the BLM weigh the "long-term benefits to the public against short-term benefits." A long-term perspective indicates a need for more wilderness in the Glenwood Springs region. With wilderness use growing between 8-10% per year, some wilderness areas in the state could reach capacity in 25 years. Areas like Flattops and Eagle's Nest are particularly vulnerable to overcrowding due to their proximity to urban areas. 30,000 acres of additional wilderness nearby would help absorb that overflow, and ensure that opportunities for solitude still exist 25 years hence.

The DEIS's recommendation of only 340 acres for wilderness may also be in violation of the BLM Wilderness Study Policy, which calls for the setting aside of roadless areas for multiple-use purposes. According to the Federal Register, Vol. 47, No. 23, February 3, 1982, a report of the House Interior Committee states:

> Emphasis should be on multiple natural values of roadless areas as part of an overall multiple use framework . . . rather than primarily recreational uses. [Emphasis added.]

Multiple uses in addition to recreation, which are served by wilderness designation, are watersheds, water quality, wildlife habitat, protection of natural plant communities, etc. "The extent to which the area under study can provide such benefits will contribute to its suitability for wilderness designation." (Federal Register, Vol. 47, No. 23, February 3, 1982.) Wilderness recommendations for Bull Gulch, Castle Peak, and Hack Lake would enhance such multiple uses and would assure the Glenwood Springs BLM of meeting its Congressional mandate on multiple use.

BLM acknowledges the values of wilderness for multiple uses in its statement on Eagle Mountain WSA that "opportunities would exist to use the WSA . . . as a benchmark to study changes induced by man and to study unmodified natural processes" (p. 13, Technical Supplment). Why has this same opportunity not been recognized in the case of the even larger, more unique areas of Hack Lake, Bull Gulch, and Castle Peak?

FLPMA goes even further in saying that BLM land use plans shall "consider the relative scarcity of the values involved and the availability of alternative means . . . and sites for the realization of these values" (Section 202). Considering the small percentage of the RA which can still provide wilderness values, the relative scarcity of the values provided by the three WSA's is uncontestable. Nor are there any alternative means of realizing those values available elsewhere in the Resource Area.

Not to consider the relative scarcity of wilderness on its lands and to act accordingly constitutes a flagrant violation of this provision of FLPMA on the part of the Glenwood Springs BLM.

CASTLE PEAK

Castle Peak WSA is a rolling, mid- to high-elevation upland covered with "grassy meadows interspersed with ponds and dense stands of spruce/fir" (Technical Supllement). The area is crowned by the "unusual basalt geological formation of Castle Peak, which differs substantially from the geology and scenery of the surrounding locale." According to the Supplement, the "primeval" character of the area offers a contrast to the surrounding, more built-up areas.

Castle Peak contains Class A scenery, panoramic vistas, abundant wildlife, including mountain lion, elk, waterfowl, and birds, supporting in part by the habitat provided by the dead, standing timber in the area.

The rationale also fails to point out, as stated on page 102 of the DEIS, that an undetermined portion of the timber income would occur outside the Resource Area.

Due to increased pressure on nearby wilderness areas, because of fast growing wilderness use (estimated to be between 8-10% per year), it is unlikely that the economic benefits from wilderness designation would be minimal because most of the increased use would "be displaced from nearby areas" (p. 85). Nor is it true that income derived from wilderness uses of the area would not be affected by roading and other non-wilderness development of the area (p. 80).

It is misleading, for example, to state on page 90 that zoning classifications for utilities facilities in Castle Peak would protect elk calving areas, without also pointing out the opposite effects of roads and human use on calving grounds. It is likewise misleading to declare that aquatic wildlife would be adversely affected by wilderness designation because improvements would not be possible (p. 90), without mentioning erosion and other adverse impacts to aquatic habitats from roading.

Here and elsewhere, the Supplement gives the erroneous impression that wildlife and wilderness uses could continue largely unaffected by the proposed non-wilderness uses, even though, as stated on page 87 of the DEIS, naturalness would be lost "forever" throughout the WSA.

An important question concerning Castle Peak is the fire hazard posed by the dead timber in the area. Let it be said from the outset that fire is a natural process which opens up forage for wildlife, gives rise to a natural plant succession, and that Castle Peak should be as a place where this process could take its course without man's interference.

In weighing the merits of various approaches to the fire hazard in the area, the example of the Flattops Wilderness Area is instructive. Flattops received its designation despite an identical fire hazard problem.

Opinions as to the probability of fire in such an area differ considerably. McCarthy, of the WRNF, feels that the potential for fire is increasing right now because windfall and other factors are causing the wood to become broken up. He also feels that the amount of fuels build-up would prevent a forest fire in Flattops from being kept within reasonable limits.

A wilderness decision on Castle Peak involves a number of tradeoffs. For example, Castle Peak is one of the Resource Area's three best big-game hunting areas (p. 74, RMP/DEIS), generating an annual personal income of $105,000 in local expenditures and $50,000 in personal income (p. 78*). At the same time, Castle Peak is one of the areas with the highest timber harvest potential, with an annual potential yield of 469 MBF (p. 80), which would secure approximately $63,000 in personal income. Additionally, logging the area would clear dead timber left from a beetle infestation 40 years ago, and help reduce the fire hazard which currently exists in the area.

In the PA, the BLM proposes to road the area for the purposes of timber cutting, reducing the fire hazard, clearing areas for forage, improving aquatic habitat, water yield projects, and ORV recreational opportunities. None of these reasons, in our opinion, presents a compelling need to sacrifice the wilderness attributes of this small remaining pristine area.

The timber potential is marginal, by any measure, compared to the wilderness values which logging and ORV use would forego. Castle Peak's portion of the BLM statewide allowable harvest figure (13 MMBF per year) would be only 3.6%. Its contribution to the timber potential of the nearby White River National Forest (100-153 MMBF) is an inconsequential .04%. Regional demand has dropped dramatically in recent years, to 12-16 MMBF for saw timber, and 20-22 MMBF for deadwood, according to John McCarthy, WRNF Forester. White River's major buyer, Kaibab Mill, has closed, along with most other mills in the state. The White River Forest contains a backlog of sawtimber because of the mill closing, and its capacity is eight times larger than the demand. Nevertheless, the Forest Plan calls for up to 28,000 acres of new timber harvest, and up to 54 miles of new roads.

Even were the timber industry to revive in future years, the region's capacity so far exceeds demand that it is safe to guess that Castle Peak's negligible timber contribution will never be in serious demand.

According to the Supplement, wilderness is a scarce resource and becoming scarcer. Seen in a future perspective, how much more of a contribution to public well-being Castle Peak will be as a small remnant of a dwindling ecosystem than as a brief provider of unneeded timber.

Foregone by wilderness designation will be $63,000 of personal income which would be generated by timber harvest in Castle Peak. Yet the rationale on p. 82 of the Supplement fails to mention the adverse effects of non-wilderness on the $105,000 in personal income currently produced by non-motorized uses of the area (mostly hunting).

*Page numbers refer to the Technical Supplement, unless otherwise indicated, throughout this section.

On the other hand, he and other foresters point out that the right combination of aridity and wind which would precipitate a bad fire rarely occur at this high elevation, as indicated by the fact that 75% of Flattops Wilderness has experienced no fire in the 40 years since the beetle infestation. Also, a study of the probability of fire in the area found the risk to be low.

Furthermore, fire control in widlerness areas not ruled out by the Wilderness Act, and, in fact, is permitted with certain stipulations in the Flattops area. The Flattops Fire Management Plan, for example, specifies how long and on how much acreage a fire can be permitted to burn, depending on the soil vulnerability of the area, and whether the fire was naturally ignited or man-caused. The regional forester may even authorize use of helicopters or bulldozers, if necessary.

We propose that a fire management plan similar to the Flattops can be devised for Castle Peak, such that in the rare event a fire started, it would at least have a chance of being kept within reasonable bounds (dependent on the fuel build-up, wind, etc.). Meanwhile, the area would be spared the ravages of development.

One might even venture to guess that over the long term, considering the low risk of fire, that the effort, expense, and adverse impacts associated with the control of future forest fires, might come to less than those which will surely result from the diverse developments proposed in the Preferred Alternative.

Roading for the purpose of wildlife habitat management is another debatable issue. Wildlife experts agree that elk need the cover and thermal barriers provided by dense tree stands, and also the mobility and browsability provided by open meadows. The question is in what combination.

The Technical Supplement does not indicate whether the balance of these needs is currently deficient in Castle Peak or whether correcting any identified imbalance by roading would outweigh the adverse impacts (noise and stress) on wildlife of these very same roads and human activity.

The substantial short-term decline in big game, described in the Technical Supplement, would take a large toll on the local economy, while the projected long-term gain in big game is highly questionable, considering that there is no plan to close the roads after habitat improvements and timbering are completed. Rather, they will be left open for ORV use, continuing the impacts of noise and stress associated with human use. Also not mentioned in the Technical Supplement is that the long-term gains in big game will be at the expense of wildlife diversity which now thrives in Castle Peak's undisturbed ecosystem.

Morever, the final RMP/DEIS fails to clarify whether erosion associated with roading will conflict with plans for aquatic and riparian habitats.

Concerning the need to leave Castle Peak open for ORV use as a "scenic area for family camping" (p. 91), this is clearly not an urgent priority considering 1) the "relatively low ORV use presently occurring in the WSA" (p. 81); 2) "ORV use on public land is a small percentage of the total use for the region (DEIS, p. 172); 3) 80% of the land area in the RA is open to ORV use in the Preferred Alternative; 4) 30 times more land in the RA is available for motorized than for non-motorized recreation; and 5) according to map 3-19, large amounts of new roaded areas will be opened up in all alternatives.

Even if roading in Castle Peak was justified on other grounds, it can be questioned on budgetary grounds alone. At a rough estimate of $5,000 per mile, it is unlikely that any of the proposed roaded uses would prove cost-effective, especially in light of the reliable and proven hunting income which would be lost in the process.

The BLM's management schemes for Castle Peak also assume a large budget for the non-extractive resources, such as water and wildlife, which is somewhat doubtful considering the minerals emphasis currently in effect throughout the agency. In a time of uncertain future funding, Castle Peak's multiple resources are better and more inexpensively managed by wilderness management than by production uses.

In sum, the Colorado Wilderness Network believes that, despite the temptation to exploit Castle Peak's marginal timber and ORV potential, these resources are more replaceable than wilderness. Therefore, the long-term public interest is better served by Castle Peak as wilderness.

BULL GULCH

The last minute rejection of Bull Gulch for a wilderness recommendation is questionable in the extreme. The area has received close to unanimous support in the public comments cited in the Technical Supplement, at open houses in May 1982, and at public hearings in December 1982. Agency support, as well, is evident in the Supplement's glowing description of the area's wilderness qualifications, following which the rationale for a non-wilderness recommendation appears highly incongruous.

The area has little potential in the way of timber, minerals, ORV use or habitat management. Most of the small quantities of these resources which do exist in the area are located in places where rugged terrain makes their development uneconomical.

At the same time, Bull Gulch preeminently fulfills all the qualifications for wilderness, including naturalness, solitude, and opportunities for primitive recreation. Most striking is the area's unusual diversity of land forms, geological formations, vegetation, wildlife, ecosystems, and opportunities for a wide variety of non-motorized recreational experiences.

The area contains sandstone pinnacles, prairie falcon, bald eagles, and the same Maroon sandstone formations found in the Maroon Bells Wilderness. Bull Gulch contains Class A Scenery and outstanding recreational opportunities for Colorado River rafting, a sport which generates $200,000 annually in sales, as noted in the Technical Supplement.

In the face of this overwhelming evidence for a wilderness recommendation, the Bull Gulch rationale appears an unsubstantiated fabrication at best. The rationale in no way follows from the preceding analysis, and contains several telling inconsistencies. It states first that administrative restrictions (ACEC, ORV closures, etc.) will protect the area, making wilderness designation unnecessary, while two sentences later we find that non-wilderness status will eliminate conflicts with future minerals and timber development. The contradictions are obvious. If non-wilderness status will allow timber and mineral development, the administrative "protection" measures apparently will not protect the area. Since the area's minerals and timber resources are insignificant (pp. 126 and 146, RMP/DEIS, and elsewhere), why then do we have to keep the area open for this development? BLM is trying to have it both ways, but there is no such thing as part wilderness!

Exclusion of Bull Gulch based its alleged lack of diversity is also unfounded. Page 51 of the Supplement states that the vegetative type represented by Bull Gulch (pinyon-juniper) is unique regionally, but common to many Wilderness Study Areas under review by the BLM elsewhere in the Rocky Mountain region.

This statement fails to acknowledge the many other vegetation types also found in the WSA and its unusual geologic formations, the particular combination of which is surely not found in any other WSA. That BLM is able to claim that Bull Gulch is not unique nationally illustrates once again the inadequacies of the Bailey-Kuchler Vegetation System in accurately pinpointing diversity. The Bailey-Kuchler System not only fails to break down vegetative types into small enough sub-classes, but leaves out geologic, hydrologic, topographic, elevational, and other types of factors which should be included in an analysis of diversity.

Even if the combination of characteristics found in Bull Gulch could be found in other WSA's, its value in providing an alternative type of wilderness experience within a region dominated

by high-elevation, spruce/fir types of wilderness is reason enough for including it in the National Wilderness Preservation System.

Bull Gulch is also one of the few WSA's of the pinyon-juniper type located within convenient driving distance of Denver

In addition to an unconvincing rationale, several technical issues concerning Bull Gulch need to be addressed in the final wilderness EIS. A recent 10th Circuit Court ruling changes the way in which pre-FLPMA leases are to be handled in WSA's. Previously, BLM assumed it had no control over development of these leases in WSA's, and that future development would jeopardize the manageability of wilderness areas containing them.

The 10th Circuit ruling says that leases can be developed only if they contain valid existing rights, and this must be determined on a case-by-case basis. Since Bull Gulch was found unsuitable for wilderness, in major part to provide flexibility for development of its pre-FLPMA leases (p. 67), the BLM will now need to go back and determine whether any of these leases do in fact contain valid existing rights whose development could jeopardize wilderness values. Both the analysis and the rationale will have to be rewritten accordingly.

A recent Department of the Interior decision also requires revision of the final Bull Gulch analysis. BLM managers have been directed to redraw boundaries of WSA's so as to exclude any portions containing non-federally owned subsurface minerals, and then to re-evaluate their wilderness potential. Since Bull Gulch's "split estate" section lies squarely in its middle, the area's WSA status would seem to be in question if this directive is taken literally.

However, the subsurface minerals are state-owned, and the state of Colorado has strongly expressed its willingness to facilitate land exchanges which will improve manageability of BLM's wilderness and other sensitive lands. In following the DOI directive, we urge BLM to take a strong stand in preserving Bull Gulch's WSA status by making a wilderness recommendation which specifies that such a trade should take place. The BLM should also keep in mind that split estate lands inside wilderness are no worse from a manageability standpoint than inholdings, and many a wilderness has been recommended, inholdings notwithstanding!

Finally, another directive from the Secretary of the Interior indicates that no oil and gas leases are to be issued in WSA's as of December 1982. We trust that the Glenwood Springs BLM is carrying out this directive with regard to all of its WSA's.

HACK LAKE

Much of the above discussion of problems with Bull Gulch's non-wilderness recommendation rationale apply also to Hack Lake. Like Bull Gulch, Hack Lake has outstanding wilderness characteristics, few conflicts, and the BLM's rationale is inconsistent with its analysis. In addition to its scenic, wildlife, backpacking, and hunting opportunities, Hack Lake also provides good fishing opportunities. The area contains threatened Colorado River Cutthroat Trout, and, as with Bull Gulch, neither its timber, mineral or ORV potentials are significant (pp. 20 and 31).

Despite its undeniable wilderness qualifications -- easy manageability and lack of conflicts -- the BLM appears to have engineered Hack Lack's elimination through a rationale which seems arbitrary and contrived. Among the Quality Standards which BLM is required to use in evaluating its WSA's is "consistency with other governmental plans." The BLM rejects Hack Lake on the grounds that, because Congress has not conferred wilderness designation on areas which, like Hack Lake, lie below Flattops Wilderness rim, it does not intend these areas to be wilderness.

A review of the Hearing Record on the history of Flattops' Wilderness designation reveals nothing to warrant this conclusion. There is no reason to believe these neighboring areas might not be considered for wilderness at a future date. Even if they are not, the BLM is not prevented from recommending Hack Lake through its own separate and distinct wilderness study process.

If fact, BLM should take the initiative in this, since a wilderness designation for Hack Lake could lead to the designation of nearby areas, as well. Natural areas throughout Colorado with jurisdictions split between the Forest Service and the BLM risk losing their natural values because of the refusal of the two agencies to collaborate in their protection. Hack Lake is no exception.

More important, BLM has not weighed the "consistency" argument equally with the other Quality Standards. Clearly, the consistency standard has been given undue consideration, to the exclusion of other Quality Standards, such as naturalness and "effects of wilderness on other resources," whereas a balanced appraisal of all standards most likely would have produced a wilderness recommendation.

Like Bull Gulch's rationale, Hack Lake's rationale will need revisions in the final wilderness EIS, to bring it into line with the preceding analysis.

In sum, the Colorado Wilderness Network recommends wilderness status for all four wilderness study areas, Castle Peak, Bull Gulch, Hack Lake, and Eagle Mountain. Information in the two documents, together with the increasing need for wilderness, show these areas not to be redundant, unnecessary wilderness resources, as BLM would have us believe. Rather, they form part of a rapidly disappearing resource whose material and spiritual values grow with each passing year.

Local and national opinion, local economic needs, and ecological necessity in terms of preserving species diversity, point toward a wilderness recommendation for all four WSA's.

> "a tract of the public lands...may be sold under this Act where...the Secretary determines that the sale of such tract meets the following disposal criteria: (1) such tract because of its location or other characteristics is difficult and uneconomic to manage as part of the public lands, and is not suitable for management by another Federal department or agency".

It is strongly recommended that any sales of these lands be conducted on a non-competitive basis, as provided for in the Federal Land Policy and Management Act, Title II, Section 203, Paragraph (f). Therefore, the Secretary should give consideration to the current, qualifying policy for potential purchasers where the above criteria is met.

It is further recommended that no mineral reservation be made on the small isolated parcels of public lands offered for sale under the Land Tenure Adjustments.

Most of the isolated parcels recommended for sale are (1) of such small acreage that economic development of minerals would be impractical, and (2) "...that the reservation of mineral rights by the U.S.A. is interfering with...appropriate non-mineral development of the land and that such development is a more beneficial use of the land than mineral development", Paragraph (b), Section 209, Title II of the Federal Land Policy and Management Act. Therefore, to reserve minerals to the U.S.A., where minerals are not known to exist, would conflict with oil shale development.

II. Transportation

The Economic Development Alternative for Transportation Management outlines proposals to acquire and maintain a BLM Road across Union Oil Company lands in the East Fork of the Parachute Creek area.

Since the proposed route will intersect and conflict with the location of UOC's shale oil operation, and therefore will present hazardous conditions for public access, it is strongly recommended that the above proposed development be eliminated.

III. Minerals Management

The Continuation of Current Management Alternative proposal for Minerals Management delineates areas of Federal reservation of Oil and Gas, Oil Shale, Petroleum and Nitrogen within privately held surface fee lands in the Parachute Creek area.

Union Energy Mining Division

Union Oil Company of California
2777 Crossroads Boulevard, Suite 100
Grand Junction, Colorado 81501
Telephone (303) 243-0112

UNION

James S. Cloninger

February 2, 1983

Mr. Al Wright, Area Manager
Glenwood Springs Resource Area
P.O. Box 1009
Glenwood Springs, Colorado 81602

Dear Mr. Wright:

Union Oil Company of California (UOC) appreciates the opportunity to comment on the Draft Environmental Impact Statement (DEIS) for the Glenwood Springs Resource Management Plan (RMP). Union Oil Company's Parachute Creek properties adjoin Glenwood Springs Resource Area lands, as do other oil shale lands in various stages of development. These comments center around the interaction necessary between management of Bureau of Land Management (BLM) lands and oil shale development lands.

We support the stated approach to land management in the Glenwood Springs RMP. Efforts have clearly been made to protect unique or sensitive resources while allowing resource development where appropriate, and under a multiple use philosophy. The oil shale resources west of Glenwood Springs exemplify areas where mineral development is appropriately emphasized. They encompass not only the Naval Oil Shale Reserve (NOSR), but several private oil shale holdings in various stages of development. In the case of Union Oil's Parachute Creek Shale Oil Program, production from the 10,000 barrel per day (BPD) Phase I facility is scheduled to begin in 1983. The 80,000 BPD Phase II expansion is currently in the permitting stage. The comments below are submitted consistent with allowing oil shale development in the area within sound constraints for environmental protection.

I. Land Tenure

The Preferred Alternatives for Land Tenure Adjustments is endorsed by Union Oil Company. The small isolated parcels of public lands depicted as "suitable for disposal" in the RMP do meet the current following criteria required for "Sales" in the Federal Land Policy and Management Act, Title II, Section 203, Paragraph (a) which reads:

These federal mineral leases are all located within the valley lands which by geologic structure, are outside of the oil shale mahagony marker and have no oil shale value. However, the reservation of the mineral rights to the U.S.A. is interfering with the development on adjacent oil shale lands. The related oil shale production facilities are located within the same areas of the federal leases, and use of the lands for any other purpose would be in conflict with shale oil production.

Moreover, the federal reserved lease acreage located in the Upper Parachute Creek area are not large enough to provide economically feasible development for oil and gas, nitrogen, or petroleum if they were found to exist. To date, past exploration drilling ventures in the surrounding area have been non-productive.

Therefore, it is strongly recommended that, upon expiration of the current federal oil and gas leases located in the Upper Parachute Creek valleys, the Secretary discontinue the Simultaneous Lottery filings. It is further recommended that the Secretary convey the mineral interests to the surface owner, in accordance with the policy as provided in the Federal Land Policy and Management Act, Section 209.

IV. Cultural Resources

Under the Preferred Alternative, the current visual resource classification would be changed from Class II to Class III in the entire area surrounding the East Fork of Parachute Creek, including the Naval Oil Shale Reserve (NOSR). Consistent with current construction of access roads, mining, and shale oil retorting facilities, a Class V designation is more appropriate for UOC's Long Ridge property. In addition, it should be recognized that while the proposed visual resource classification on the NOSR may be appropriate at this time, it will be inconsistent with and should be subordinate to any future development of the NOSR. The existence of UOC's existing shale oil upgrading plant, single status housing camp, and proposed reservoir in the main stem of Parachute should be recognized in classification of the lands as well.

V. Water Resources (Appendix H)

Although Table H-4 (Change in Sediment Yield from Mechanical Treatment and Burning - Preferred Alternative) indicates a change in sediment yield of 0.05 tons/acre/year for Parachute Creek, the majority of sediment yield increase will occur in the East Fork and East Middle Fork of Parachute Creek.

Mr. Al Wright, Area Manager
February 2, 1983
Page Four

Therefore, the table should be broken down to show the estimated value of the various tributaries of Parachute Creek. Further, the table should estimate maximum disturbance as well as the minimum disturbance. A timetable for implementation of the management practice would also be helpful.

VI. Livestock Grazing

UOC supports the Preferred Alternative as setforth in the EIS, Glenwood Springs Resource Area, for Livestock grazing. This alternative would permit accommodation of Active Livestock Preference for the economically depressed livestock industry, while improving range conditions by increasing the forage quantity and quality. This alternative also assures wildlife forage availability while maintaining a forage level for greater prevention of fire losses.

Again, we appreciate the opportunity to comment on the Glenwood Springs RMP EIS. Please contact me at any time if you have any need for information or with any questions.

Very truly yours,

James S. Cloninger

JSC:tw

cc: D. S. Elliott
T. L. Larson
B. J. Taylor
G. R. Morris

BULL GULCH WILDERNESS STUDY AREA
(CO-070-430)

University of Colorado
Wilderness Study Group

May, 1981

UNIVERSITY OF COLORADO WILDERNESS STUDY GROUP

January 21, 1983

Al Wright, Area Manager
Bureau of Land Management
P.O. Box 1009
Glenwood Springs, CO 81602

Dear Mr. Wright,

I am writing to be included included in the public comment period of the Glenwood Springs RMP. I have enclosed proposals written by the CU Wilderness Study Group and agree with their recommendations on Hack Lake, Bull Gulch and Castle Peak to be designated as Wilderness Areas. I do not feel that it is adequate to not designate a wilderness study area as Wilderness simply because its current management is as a wild and primitive area. Management has been known to change and once a piece of land has been changed from wilderness to other uses, it can never be returned to its original wild state. All three of those areas are wild and pristine now and have unique qualities which make them prime candidates for inclusion in the National Wilderness Preservation System. Please consider the consequences possible for lack of future thought when managing public lands.

Thank you

Denise Dralle
1004 14th St. Apt. 3
Boulder, CO 80302

UNIVERSITY MEMORIAL CENTER BOULDER, COLORADO 80302 (303) 492-6870

BULL GULCH WILDERNESS STUDY AREA(CO-070-430)

The Bureau of Land Management(BLM)is currently in the study phase of its review of unappropriated public lands for the purpose of ultimately designating certain lands as wilderness. As directed by the 1976 Federal Land Policy Management Act, the process of review involves Initial and Intensive Inventories, public comment periods, information soliciting, and finally, designation of the reviewed lands as either Wilderness Study Areas(WSA), or non-wild public land.

Bull Gulch, Inventory number CO-070-430 is a WSA in the Glenwood Springs Resource Area, Grand Junction District. Bull Gulch is south of Burns, Colorado, and is bordered entirely on the west side by the Colorado River in Eagle County. Bull Gulch WSA is 15,000 acres, and has been extensively subdivided, primarily to exclude ways and roads.

Natural Characteristics

Bull Gulch is relatively dry, receiving 25 to 35 inches of precipitation a year, most of which is snowfall. The elevation varies from 6400 feet along the Colorado River to 9700 feet along the southeastern boundary. The topography is very rugged. Most of the unit comprises of side canyons of the Colorado River. Bull Gulch itself is an interesting canyon because of its red rock cliffs, which are the same rock formations as those at Maroon Bells. There are also interesting pinnacle formations near Jack Flats. Bull Gulch has many diverse ecosystems. Along the Colorado River and in some of the side canyons there is a riparian plant community. North and northwest facing slopes are dense with aspen, spruce, and Douglas Fir stands, with areas of Ponderosa pine in the lower Meadow. The canyons in lower elevations have pinyon-juniper on their sides, while grasses, broomweed, and sage brush, grow on rugged canyon walls, gypsum hills and in the numerous meadows in the unit. There are three soil types found in Bull Gulch. The Haplargids-Usorthents-Argiborolls association is characterized as cool, shallow to deep, well-drained soil found on level to moderately steep slopes on foothills and fans. The Haplobrolls-Agriborols-Eutroboralls association is cool, shallow to deep, well-drained soil found on level to moderately steep benches and mountain slopes. The Calciboralls-Haploboralls-Haplargrids association is cool, shallow to moderately deep, well-drained soil found on sloping to steep benches and mountain slopes.

Resources

Wildlife:
Bull Gulch has a great abundance and diversity of wildlife.

The Colorado Division of Wildlife has identified parts of Bull Gulch as critical muledeer and elk winter range. The unit's major game species include mule deer, elk and black bear. Coyotes, pikas, gophers, porcupines, squirrels, chipmunks, raccoon, and snowshoe hare are common small game. Blue grouse live in the more wooded valleys and ptarmigan find shelter in the sagebrush and meadows. Both prairie falcons and Bald eagles nest in Bull Gulch, and there is a good possibility that mountain lion are found in the unit. The Colorado River contains many popular fish species including native, rainbow, and brown trout, and largemouth bass.

The wildlife resources would definitely better protected if the area was given Wilderness designation.

Timber:
Timber is sparse in the unit, but a little fence post and firewood gathering does take place in the unit, although this is very minimal. Firewood gathering takes place only on the plateau above the Colorado River, and in the southernmost portion of the unit. No large scale logging is possible because of the scarcity of timber. Ponderosa pine is the major fuelwood source, although some people will take aspen and fir. If the area was closed to firewood and fencepost gathering it would have little effect upon the people living near the area because of the close proximity of White River National Forest.

Grazing:
Grazing does take place within the Bull Gulch WSA, but has little effect upon the area's naturalness and is compatable with wilderness designation. The following allotments are entirely or partly within the the Bull Gulch Unit:

#	NAME	LESSEE	AUMs
8616	Deer Pen Gulch	Bent Land Livestock	900
8625	Bull Bulch Common	Eagle Range Land & Albertson Cattle Co.	526
8639	Upper Cottonwood	Brush Creek Eagle River Co.	265
8642	Trail Gulch AMP	Luark	655
8643	Blowout AMP	Leroy Mayn Ranch	535

Minerals:
No minerals have been identified to exist in economically valuable amounts or locations within the unit. Potential for mossrock and sand and gravel extraction is limited, and would be expensive. Gold placer claims have been staked on the eastern boundary of the unit. Gypsum also may be potentially mined along the Colorado River.

There are eleven oil and gas leases located in the Bull Gulch unit totalling 9735 acres:

Lease #	Lease Date	Lease Acreage
C-15861	5/1/72	458

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HACK LAKE WILDERNESS STUDY AREA(CO-070-425)

University of Colorado
Wilderness Study Group

May, 1981

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C-16559	9/1/72	46
C-16560	9/1/72	1184
C-19399	12/1/73	2318
C-20518	6/1/74	500
C-20520	6/1/74	547
C-20553	6/1/74	630
C-20555	6/1/74	1653
C-20818	9/1/74	40
C-23483	5/1/76	342

There is no oil and gas exploration occurring in the unit.

Recreation:
Recreational potential within the unit is great. The visitor can undoubtedly experience solitude, and the landscape is conducive to primitive recreation, backpacking, hiking, photography, bird watching, wildlife study, botany, etc., are all activities which are well suited to the Buil Gulch area. Rafting the Colorado River on the western boundary is popular and Jack Flats serves as a scenic picnic area. Hunting and fishing are the most common forms of recreation in the unit.

Water:
There are two sources of water in the unit; the water in the Colorado River, and the springs within the unit. The developed springs are poorly maintained, and are only used for grazing. The uneven terrain tends to funnel-off surface water, and the depth to ground water averages over eighty feet. Runoff is high and soil permeability is low to moderate. Spring water would probably be better protected through Wilderness designation.

Recommendation

The University of Colorado Wilderness Study Group recommends that Bull Gulch Wilderness Study Area be designated Wilderness. The area is particularly unique because of its geologic features, vegetative diversity, and wildlife abundance. Bull Gulch can be considered one of the real gems of the Colorado Bureau of Land Management Wilderness Review. We most assuredly feel that wilderness designation will allow or enhance more of the areas resources than it will restrict them, and that preserving this unique Wilderness Study Area is the logical goal.

Sources

1) Bureau of Land Management Case Files: BLM District Office, Denver, Colorado

2) Bob Miller; Colorado Division of Wildlife, Denver, Colorado. 825-1192.

3) Jim Habbit; Wilderness Planner, BLM District Office, Glenwood Springs, Colorado. 945-2341

4) Soil Maps; Eagle and Garfield counties.

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HACK LAKE WILDERNESS STUDY AREA(CO-070-425)

The Bureau of Land Management(BLM)is currently in the study phase of its review of unappropriated public lands for the purpose of ultimately designating certain lands as wilderness. As directed under the 1976 Federal Land Policy Management Act, the process of review involves Initial and Intensive Inventories, public comment periods, information soliciting, and finally, designation of the reviewed lands as either wilderness study areas, or non-wild public lands. Wilderness Study Areas must be 5000 acres or more, or be contiguous to existing wilderness. It must be determined to have outstanding opportunities for solitude or primitive, unconfined, recreation. The latter determinant is, of course, subjective. Final Wilderness Study Areas are to be managed in a way "that the BLM has determined does not impair the land's suitability for preservation as wilderness." Mining activities, if governed by the 1872 Mining Law, take precedent over all other activities, and Grandfathered Uses, those undertaken prior to 1976 FLMPA, are also allowed, in the interim study period. Final classification of these lands will be in 1992 on the basis of wilderness values.

Hack Lake, Inventory number(CO-070-425)is a wilderness study area in the Glenwood Springs Resource Area, Grand Junction District. Hack Lake WSA is 3,600 acres, and is contiguous to Flat Tops Wilderness Area, along the WSA's northern boundary. The Eagle/Garfield County line passes through the area.

Natural Characteristics

Hack lake is a very diverse area. It is dry in lower elevations, while being relatively lush in higher elevations. The altitude ranges from 7,600 feet to 11,034 feet in the northwest corner of the unit. The area exhibits a range of communities from desert, dry with cactus and sparse grasses, to lush stands of aspens along the Hack Creek drainage, and spruce-fir woods around the lake area. Hack Lake's topography can be summed up as being the slope of mountain, with its summit in the Flat Top Wilderness. There is one type of soil found in the Hack Lake Unit, which is the Cryoboralls-Cryoboralls-Cryorthents. This tends to be a cold, deep to shallow well-drained soild found on sloping to steep mountain sides and mesas.

Natural Resources

Wildlife:
An important resource in the Hack Lake WSA is wildlife.

Contiguous to Flat Tops Wilderness Area, Hack Lake WSA has much of the same wildlife. While a major herd of 20,000 elk roam the Wilderness, only an isolated, static herd of 600 elk are contained within the WSA. Major game species include elk, mule deer, Black bear, and mountain lion. Small game include blue grouse, ptarmigan, showshoe hare, red fox, coyote, weasel, marten, beaver, squirrels, chipmunks, gophers, pikas, porcupines and marmots. Fowl include mallards and teal.

Hack Lake is stocked and supports a reputedly large population of native trout. Also found are rainbow and brook trout. According to the proprietor of the Sweetwater Lake Resort, Larry Gay, fishing is the single most popular recreation in the unit.

Grazing

Grazing is currently a major use within the unit, but since grazing is allowed in a wilderness area, it is not considered a conflict with wilderness designation. The following allotments are within the Hack Lake Wilderness Study Area:

NUMBER	NAME	LESSEE	AUMs
8632	Upper Little Sheep Creek	John Burnel	338
8633	Upper Hack Creek	John Burnel	384
8634	Three Springs	Two Rivers Ranch	60
8627	Sugarloaf	John Burnel	50

Timber

Timber is very sparse within Hack Lake. The spruce and fur trees around the lake are young since the area is still recovering froma massive beetle kill in the 1940's. The trees in Hack Lake are not economically feasible for harvestation, especially with nearby areas abundant in timber.

Minerals

There are no mineral claims or leases in the area, although there could possibly be some potential for oil and gas exploration. Oil and gas exploration could be expensive and probably not *economically feasible. A gold placer claim* was made in the area about forty years ago, but no extraction took place. Moss rock is also in the area but no extraction has taken place.

Recreation

The recreational potential of the area is a major resource if not the largest resource. Recreational resources include the Ute Trail which long ago was used and maintained by the Ute Indians. The Ute trail follows the slope up to Hack Lake and the ridge. It continues on into the Flat Tops Wilderness. A log cabin is maintained by sportsmen, and is close to the lake. This cabin was built in the 1940's by a sheepherder. Another cabin was built in the late 1880's but has disintegrated with time.

Hunting is another major form of recreation in the area. The Sweetwater Lake Resort, at the base of the Ute Trail, is one of the local outfitters and guides for Hack Lake and the Flat Tops Wilderness. Hunting season is the time of heaviest use.

Fishing is probably the year round favorite activity in the area. Hack Lake and probably Hack Creek are good for fishing. All of these forms of recreation would be protected through wilderness designation.

Water

Permanent water sources in the unit include Hack Lake, a couple of springs, and Hack Creek. Wildlife and people recreating use this water for drinking, etc. Wilderness would protect these water sources.

Recommendation

The University of Colorado Wilderness Study Group after doing field surveys and reviewing resource conflicts recommends that the Hack Lake Wilderness Study Area be designated Wilderness. Although there are problems with contiguousness with the Flat Tops Wilderness, these problems can be

solved by requesting that the United States Forest Service (in its planning process)keep adjacent areas in a natural condition. The C.U. Wilderness Study Group found almost no resource conflcts with wilderness designation.

Sources

1) Bureau of Land Management Case Files; BLM District Office, Denver, Colorado.
a) Hack Lake WSA(CO-070-425)

2) Bob Miller; Colorado Division of Wildlife, Denver, Colorado. 825-1192

3) Jim Habbit; Wilderness Planner, BLM District Office, Glenwood Springs, Colorado. 945-2341.

4) Larry Gay, Owner, Sweetwater Lake Resort, Sweetwater Colorado. 524-9736.

5) Soil Maps of Eagle and Garfield Counties.

COLORADO CATTLEMEN'S ASSOCIATION

February 2, 1983

Mr. Alfred W. Wright
Area Manager
Bureau of Land Management
Glenwood Resource Area
P. O. Box 1009
Glenwood Springs, CO 81602

Dear Mr. Wright:

At a recent meeting of the CCA Board of Control, held January 15, 1983, discussion was held as to the feasibility of Castle Peak and Bowl Gulch becoming a part of the wildnerness system of Colorado.

The board pointed out that such consideration had been previously given and a study had been completed. One of our members, Mr. John Benton, has written to you outlining the concerns of adding Castle Peak and Bowl Gulch. The board reviewed Mr. Benton's documentation and voted unanimously to support his position.

Also discussed during the meeting was the problem of AUMs of which the board requests close scrutiny.

We appreciate your consideration of our support towards the withdrawal of Castle Peak and Bowl Gulch from wildnerness consideration.

Sincerely,

David G. Rice, Jr.

David G. Rice, Jr.
Vice President
Legislation/Federal Lands

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION VIII
1860 LINCOLN STREET
DENVER, COLORADO 80295-0699

FEB 1 1983

Ref: 8PM-EA

Alfred Wright, Area Manager
Bureau of Land Management
Glenwood Springs Resource Area
P.O. Box 1009
Glenwood Springs, Colorado 81602

Dear Mr. Wright:

EPA Region VIII has reviewed the draft environmental impact statement for the Glenwood Springs Resource Management Plan. Generally we have found the document to be well organized and thorough, with information presented clearly.

We have identified three areas of concern to EPA that are discussed in the attached comments. We believe that the reasons for choices of water quality management activities and wilderness recommendations need to be clarified in the Final EIS. We also think that more information is needed regarding grazing management activities and their impacts on water quality.

Based on the system EPA uses for categorizing environmental impact statements under its review, we have rated this DEIS as LO-2. This means that we do not currently have any objections to the proposed plan. We believe that additional information would improve the Final EIS and adequately explain the proposal and its environmental impact.

I hope that these comments will prove useful to your office in developing the Final EIS on this Resource Management Plan. If you need further assistance from this office, please contact Mike Gansecki of my staff (FTS 327-4831).

Sincerely yours,

Steven J. Durham
Regional Administrator

Enclosure

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DETAILED COMMENTS OF THE ENVIRONMENTAL PROTECTION AGENCY ON THE DRAFT ENVIRONMENTAL IMPACT STATEMENT FOR THE GLENWOOD SPRINGS RESOURCE MANAGEMENT PLAN (BLM)

1. The Draft EIS is a generally coherent and well-organized document. EPA is particularly impressed with the work that was done to define sediment runoff characteristics in various subregions of the Planning Area. Based on the system EPA uses to categorize EISs under its review, we have rated this Draft EIS as LO-2. This means that we have no objections to the project proposal; however, we believe that additional information is needed in the Final EIS. We do think that greater consideration could be given to outlining the priority areas for BLM management for all of the resources concerned. We are particularly concerned with the protection of critical watersheds, water quality problem areas, and areas of critical environmental concern.

2. Preferred Management Decisions

The EIS presents three principal alternatives for evaluation -- the continuation of current management practices, a resource protection alternative, and an economic development alternative. On page ix of the Summary, the Preferred Alternative is identified as, "including aspects of both Resource Protection and Economic Development". For the most part, preferred management decisions presented in this DEIS can be understood as BLM's best judgment regarding these options.

However, in some situations, there are preferred management decisions made that differ considerably from the evaluated alternatives. These include certain aspects of water quality management and wilderness management. EPA believes that where such a departure occurs, that the EIS should contain more explanation of how and why those decisions were reached.

a. Water Quality Management

On page 16 of the DEIS, it is noted that:
"under Resource Protection and Economic Development Alternatives four areas shown on Map 3-1 would be monitored to identify the origins of existing water quality problems. Under the Preferred Alternative, two areas, Milk Creek and Alkali Creek basins, shown on Map 3-1 would be investigated..."

Map 3-1 is very non-specific and does not identify the watersheds or the nature of water quality problems. Under discussions of the Affected Environment, these watershed problem areas are again not defined. There is considerable discussion of salinity water quality impacts from saline seeps, ground water recharge areas, etc. We are not sure whether these are the same problem areas discussed on page 16 or not.

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The Final EIS would be enhanced by identifying the four problem areas mentioned above. A more understandable rationale should also be provided as to why these areas will not be monitored for their possible origins. If the salinity-related issues are separated from the identified water quality problems, some discussion should also be included as to what the BLM can and should do relative to salinity control. The EIS should also recognize that the U.S. Bureau of Reclamation is conducting studies for possible control of some of the saline springs in the Glenwood-Dotsero area.

The local water quality management agencies may have identified high priority watersheds which contain BLM land in addition to watersheds contained in the Areas of Critical Environmental Concern and Critical Watershed Management Areas). We encourage cooperation with these agencies in prioritizing resource management actions to these areas if needed.

b. Wilderness Management and Recommendations

A similar incongruity between the Resource Protection/Economic Development versus the Preferred Alternative occurs with respect to Wilderness Study Area recommendations. On page 35, recommendations for suitable wilderness vary from 10,755 to 30,630 acres under the evaluated alternatives. Yet the preferred recommendation identifies only 330 acres as suitable for wilderness.

The Bull Gulch WSA is of particular concern. In the discussion of wilderness values on pages 80-81, the DEIS notes that Bull Gulch "is the only areas with wilderness potential in the resource area that contains a land form/ecosystem type different from that in the existing wildernesses in the local region."

One of the more important criteria for wilderness consideration includes consideration of unique or fragile lands in a wild state. The DEIS discussion dismisses this WSA from further consideration on page 46:

"The entire area was recommended as nonsuitable because other special management recommendations to protect visual, natural, and primitive recreation values were considered more appropriate for this area. This recommendation eliminates potential manageability problems that would result from wilderness management. In addition, this area would only add to the diversity of the National Wilderness Preservation System locally."

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EPA believes that while such a decision may be justified, the EIS should spell out in greater detail the reasoning behind this decision. The Final EIS should contain a more complete description of the Bull Gulch wilderness area, its unique geological, vegetational and wildlife characteristics. The EIS should also explain the management difficulties that would occur if the area were designated as wilderness. Finally, the EIS should carefully explain the management techniques that will be proposed to protect the visual, natural and primitive recreation values and why these techniques are preferable to wilderness designation.

3. Grazing Management Proposals

The Preferred Alternative for Grazing Management would result in a 37 percent increase in livestock forage. While this goal is consistent within the framework of the other alternatives, EPA is concerned about the potential water quality implications. In the discussion of the Existing Environment on page 72, it is noted that only a brief survey of rangeland conditions was conducted in 1979. Only 9% of the range is above fair condition. The EIS also indicates that a trend evaluation of rangeland conditions has not yet been done, and that "indications are that substantial portions of the resource area are in static and downward trend" (p. 72).

The EIS should state the long-term range inventory staffing commitments needed to assure: 1) that consistent available forage for increased grazing actually exists, and 2) that grazing management systems are planned to result in improving condition trends. Improving condition results in numerous values in addition to livestock grazing capacity. Such a situation obviously calls for rangeland improvements such as vegetation manipulations and more intensive management controls as rest/rotation cycles, as is proposed on pages 26-27. However, it is difficult to understand how an almost immediate increase in Livestock Forage Allocation (about 3% as shown in Table 3-6), can be made. The Final EIS should explain the conditions that will allow such an approach to be implemented. Consideration should also be given to sediment runoff water quality effects that may occur because of intensive rangeland manipulation and use.

MEC
MINERALS EXPLORATION COALITION
Minerals Advocate In Public Policy
12640 West Cedar Drive
P.O. Box 15638
Denver, Colorado 80215
303/989-5567

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February 2, 1983

Alfred Wright, Area Manager
Glenwood Springs Resource Area
P.O. Box 1009
Glenwood Springs, CO 81602

Dear Mr. Wright:

These comments constitutes the response of the Minerals Exploration Coalition (MEC) to the draft environmental impact statement - resource management plan on the Glenwood Springs Resource Area. The MEC is a coalition of exploration companies and individuals conducting exploration on federal lands.

In view of the fact that wilderness areas designated after December 31, 1983, will be withdrawn from appropriation under the mining and leasing laws, we believe that all areas with mineral and energy potential should be excluded from wilderness designation, even though no economic deposit is now known. The withdrawal limitations will preclude the collection of new data, and new areas of mineral potential will not be found. With new discoveries effectively stopped, the policy of excluding all currently known mineral potential from wilderness should be followed, so that exploration of these areas will not be restricted and minerals might yet be produced. Explorationists tend to look at the long term because the lead time of discovery may be ten to fifteen years. The impact of wilderness on minerals should be assessed over the long term (a century or more). We believe that land use decisions should be in conformity with the policy statements made in the National Minerals Program Plan and Report to Congress released by the President in April, 1982.

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We call your attention to the mineral policy statement of the Bureau of Land Management. On page 20 of this document, the following statement is made "to protect other resource values from damage associated with mineral activities, the BLM is allowed to withdraw lands for certain uses, thus closing them to mineral entry. The BLM may also place constraints on the associated mineral activities, such as no surface facilities".

On page 161, as part of the preferred alternative cumulative impacts on minerals, a list of land closures is shown; e.g., 98,852 acres of public and private land closed to mineral location; 55,770 acres of public and private land closed to oil and gas leasing; 42,344 acres closed to oil and gas surface facilities; 11,552 acres closed to mineral sales.

We have several concerns about the attitude BLM seems to have about withdrawing and closing lands to mineral entry.

1. These closed lands include a suitable wilderness area (Hack Lake), plus 3,456 acres of adjacent land. We contend that the interim regulations on wilderness management provide for the protection of resource values. We feel it is inappropriate to close these areas.

   Withdrawals greater than 5,000 acres require congressional approval. We believe that any WSA that is deemed "suitable" by this study process should not automatically be a candidate for withdrawal action as a second layer of "protection".

2. Areas not recommended for wilderness are adequately protected by existing land use regulations and this land use plan without withdrawal. Any action to withdraw "non-suitable" WSA candidates could be viewed as an attempt to circumvent the entire BLM wilderness study program.

3. Included in these proposed closings are areas of private land. The MEC does not know of any law, regulation or court decision that allows the federal government to close private lands to leasing or sale. Because private lands are not open to mineral location, it is a moot point whether the federal government can close private lands to location.

The BLM is aware of the Interior Board of Land Appeals decision regarding wilderness consideration of tracts less than 5,000 acres and the subsequent removal of such lands from further consideration by the Secretary of Interior.

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Eagle Mountain and Hack Lake have been so removed.

Thank you for the opportunity to comment on this draft environmental impact statement - resource management plan for the Glenwood Springs Resource Area.

Sincerely,

John D. Wells
Managing Director
MINERALS EXPLORATION COALITION

TELEPHONE
303/328-7311

Board of County Commissioners Ext 241
Assessor Ext 202
Clerk and Recorder Ext 217
Sheriff Eagle: Ext 211 Basalt: 927-3244 Gilman: 827-5751
Treasurer Ext 201
Administration Ext 241
Animal Shelter 949-4292
Building Inspection Ext 226 or 229
Community Development Ext 226 or 229
County Attorney Ext 263
Engineer Ext 236
Environmental Health Ext 258
Extension Agent Ext 247
Library Ext 255
Public Health Eagle: Ext 252 Vail: 476-5844
Personnel Ext 241
Purchasing Ext 245
Road and Bridge Ext 257
Social Services 328-6328

EAGLE COUNTY
Eagle, Colorado 81631

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February 7, 1983

Alfred Wright, Area Manager
Bureau of Land Management
Glenwood Springs Resource Area
P. O. Box 1009
Glenwood Springs, CO. 81602

RE: Eagle County Comments on the Draft Environmental Impact Statement on the Glenwood Springs Resource Management Plan

Dear Al:

The Board of County Commissioners for Eagle County has reviewed the Draft Environmental Impact Statement for the Glenwood Springs Resource Management Plan and wishes to make the following comments:

1) The document as a whole encourages the Multiple Use concept, which is in accord with the Eagle County Master Plan dated April, 1981. The Board of County Commissioners strongly supports this concept.
2) More specifically, the Board generally agrees with the Preferred Alternative in the major policy areas including: water quality, water quantity, mineral restrictions, wildlife habitat improvement projects, livestock and wildlife allocations, timber allocations, management practices, wilderness designations, visual resource designations, utility and communication facilities siting, transportation and wildfire management zones.

3) The Board particularly supports the designation of areas where special management plans will be developed. The Board would like to participate in the development and review of the special management plans prepared for lands in Eagle County.

4) The Board does have a specific concern with the suggested policy to encourage disposal of Public Lands. The Board is concerned both with some of the lands designated for disposal and the method of disposal. The major concern is that lands with grazing rights currently on them be encouraged to remain in agricultural uses and that lands with limited development potential not be given false expectations for the amount of development that might be allowed on them. The Board would like to work closely with the Bureau of Land Management in further developments with the land disposal program.

Finally, the Board of County Commissioners wants to encourage the continuation of the open lines of communication between your office and the Board that have existed over the last few years. The Board would appreciate advance knowledge of any major projects proposed on lands within your district or of any proposed changes to either your current operating policies or new ones developed through the Resource Management Plan. The Board supports the effort and direction of the Draft Environmental Impact Statement.

Sincerely,

David E. Mott, Chairman
Board of County Commissioners

DEM:epm

The preferred alternative also fails to mention the increased costs associated with a 37 percent increase in livestock grazing in the Glenwood Springs Management Areas. The cost-effectiveness of items such as range improvement and water for livestock, fencing, pipelines, and other facilities have not been addressed.

There is no statement in the draft relating to BLM plans to appropriate water for multiple-use purposes although this issue is mentioned in Chapter 2 as a management concern. Will BLM appropriate water in the Glenwood Springs Area for wildlife and other purposes? If so, how much?

The re-institution of the bighorn sheep to its historic range, under the Resource Protection alternative, is a good proposal. We would encourage other plans to enhance wildlife habitat species in the Glenwood Springs Resource Area. However, individual habitat improvement projects cannot mitigate the overall lack of consideration given to wildlife values in the preferred alternatives, especially the livestock grazing and land tenure elements. Because of the increased livestock use proposed and BLM Rangeland Management policies which emphasize monitoring as opposed to vegetation inventories, the proper balance between wildlife habitat in relation to livestock grazing will be difficult, if not impossible to attain.

The land disposal plans, particularly the crucial winter range of big game wildlife, is especially hard to accept. Such areas should not be included in the asset management program because of the public value, the relationship to the personal income of the resource area, and in particular those businesses which rely on hunting and big game related activity. While the Resource Protection Alternative identifies 9,555 acres for disposal--far less than the 23,245 acres identified in the preferred alternative--we would encourage BLM to find a solution protecting any significant wildlife habitat from being sold.

In summary, the preferred alternative should have a more in-depth analysis in order to determine how the changed forage and increased grazing would adversely affect wildlife species. In view of the importance of big game to this area's ecosystem and local communities, NWF supports the Resource Protection Alternative as the best form of management.

Sincerely,

Dusty Zaunbrecher
Resource Specialist
Public Lands/Energy Division

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NATIONAL WILDLIFE FEDERATION
1412 Sixteenth Street, N.W., Washington, D.C. 20036 202--797-6800

February 9, 1983

Area Manager
Glenwood Springs Resource Area
Post Office Box 1009
Glenwood Springs, Colorado 81602

Dear Sirs:

The National Wildlife Federation is pleased to comment on Draft Environmental Impact Statement Resource Management Plan, Glenwood Springs Resource Area, Colorado.

Our most serious concern is the potential adverse affects on wildlife in the preferred alternative. Overall, there was little factual information provided by which we could see how the preferred alternative was constructed. There are four major proposed actions which we find unacceptable to the wildlife resources of the area:

- o initial forage allocation resulting in a 21 percent decline in existing big game populations.
- o vegetation manipulation resulting in a 7 percent decline in existing big game populations.
- o land disposals resulting in a 6 percent loss of crucial big game winter range.
- o land disposal and overall habitat loss to result in a 21 percent decline in big game in the next ten years.

[p. 53 Comparative Analysis]

On page 165, the DEIS reports that under the preferred alternative, wildlife species dependant upon original vegetation types would be insignificantly affected by the removal of original vegetation for livestock grazing management. Yet in the next paragraph, you state "changing sagebrush on winter ranges to a grass-forb type would have a long-term adverse impact on big game, sage-grouse, and many small game and non-game species that depend on sagebrush for their habitat requirements." Both of these statements cannot be correct. Clearly, the Resource Protection Alternative allows a management of vegetation compatible for wildlife and livestock, while under the preferred alternative, existing big game populations decline 7 percent.

GLOSSARY

GLOSSARY

ACRE-FOOT. The quantity of water or other material required to cover 1 acre to a depth of 1 foot or a volume of 43,560 cubic feet.

ACTIVE PREFERENCE. That portion of the total preference for which grazing use may be authorized. See also Total Preference.

ACTUAL USE. The use made of forage on any area by livestock and/or wildlife without reference to permitted or recommended use.

ALLOTMENT. An area designated and managed for grazing of livestock.

ALLOTTEE. Holder of a license or permit for grazing on an allotment. A permittee.

ALLOTMENT MANAGEMENT PLAN (AMP). A concisely written program of livestock grazing management for a specific grazing allotment.

ALLOWABLE HARVEST. The amount of forest products that can be harvested annually or periodically from a specified area over a stated period in accordance with the objectives of sustained-yield management. The allowable harvest includes all planned timber and fuelwood harvest volumes exclusive of such products as Christmas trees, branches, and cones.

ALLUVIUM. Unconsolidated rock or soil material such as gravel, sand, silt, or clay deposited by running water.

ALLUVIAL FAN. A fan-shaped deposit of alluvium concentrated at the foot of a steep slope.

ANIMAL UNIT (AU). One mature (1,000 pound) cow or the equivalent based upon average daily forage consumption of 26 pounds dry matter.

ANIMAL-UNIT MONTH (AUM). The amount of forage required by an animal unit for one month (800 pounds air dry forage for catttle or 160 pounds for domestic sheep). Tenure of one animal unit for one month.

AQUIFER. A water-bearing layer of permeable rock such as sandstone.

BACKGROUND. The area visible from a travel route, use area, or other observer position usually from a minimum of 3 to 5 miles or a maximum of about 15 miles.

BASEFLOW. Water that enters stream channel from springs or ground water seepage.

BASIN. A land area drained by a river and its tributaries.

BIOGEOGRAPHICAL. Pertaining to the study of the geographical distribution of living things.

BROWSE. The part of a leaf and twig growth of shrubs, woody vines, and trees used by animals for consumption.

CATCHMENT. A structure built to collect and retain water.

CIST. A box or chest especially for sacred utensils. A prehistoric sepulchral tomb or casket.

CLEAR CUTTING. An even-aged silvicultural system in which the old crop is cleared at one time; regeneration is generally natural through seeding from adjacent stands or from cone-bearing slash.

CLIMAX. The final or stable biotic community which is self perpetuating and in equilibrium with the prevailing physical environment.

COMMERCIAL FOREST LAND. Forest land that is capable of yielding at least 20 cubic feet of wood per acre per year of commercial coniferous tree species. Lodgepole pine, Engelman spruce, Douglas-fir, and ponderosa pine comprise this group in the Glenwood Springs Resource area.

CONTRAST. The effect of a striking difference in the form, line, color, or texture of the landscape features within the area being viewed.

CRUCIAL WINTER RANGE. That portion of the winter range to which a wildlife species is confined during periods of heaviest snow cover.

CULTURAL MODIFICATION. Any man-caused change in the land or water form or vegetation or the addition of a structure that creates a visual contrast in the basic elements (form, line, color, texture) of the naturalistic character of a landscape.

CULTURAL RESOURCES. The fragile and nonrenewable remains of human activity, occupation, or endeavor that were of importance in human events.

DOLOMITIC. A rock consisting largely of calcium magnesium carbonate.

EASEMENT. A right acquired by the United States to use or control private property for a road, trail, or other specified purpose.

ECOLOGICAL. Pertaining to subspecies or race that is especially adapted to a particular set of environmental conditions.

ECOSYSTEM. A community, including all the component organisms, together with the environment, forming an interacting system.

ENDANGERED SPECIES. Any species in danger of extinction throughout all or a significant portion of its ranges.

EROSION CONDITION CLASS. A classification system for ranking soil erosion in increments of 20 points: 0-20 = stable; 21-40 = slight; 41-60 = moderate; 61-80 = critical; and 81-100 = severe.

ESCARPMENT. A long, precipitous, cliffllike ridge of land, rock, or the like commonly formed by faulting or fracturing of the earth's crust.

EXISTING USE (livestock). The 5-year average licensed livestock use from 1975-1979.

FLOOD PLAIN. Level land that may be submerged by flood water.

FORAGE. All browse and herbaceous foods that are available to grazing animals.

FOREGROUND-MIDDLEGROUND. The area visible from a travel route, use area, or other observer position to a distance of 3 to 5 miles.

FOREST LAND. All land that supports trees having a 10 percent or greater crown closure, now or potentially. This includes woodland, commercial forest land, and noncommercial forest land, provided the minimum crown closure standard is met.

GRAZING PREFERENCE. See Total Preference.

GROUND WATER. The part of subsurface water that completely saturates the rocks and is under hydrostatic pressure.

GULLY. A channel (6 inches or deeper) cut by concentrated runoff through which water commonly flows during or immediately after heavy rains or during the melting of snow.

HABITAT. A specific set of physical conditions that surround a single species, a group of species, or a large community. In wildlife management, the major components of habitat are food, water, cover, and living space.

INFILTRATION. The downward entry of water into the soils.

LEACHING. The removal of materials in solution from the soil.

LITHIC SCATTER. Stone debris left as the result of tool manufacture or reshaping.

MITIGATION. The alleviation or lessening of possible adverse effects of an action on a resource by application of appropriate protective measures or adequate scientific study.

NATIONAL REGISTER OF HISTORIC PLACES. The official list, established by the Historic Preservation Act of 1966, of the nation's cultural resources worthy of preservation.

OFF-ROAD VEHICLE (ORV). Any motorized vehicle capable of or designed for travel on or immediately over land, water, or other natural terrain.

OFF-ROAD VEHICLE DESIGNATIONS.

OPEN. Designated areas and trails where off-road vehicles may be operated (subject to operating regulations and vehicle standards set forth in BLM Manuals 8341 and 8343).

LIMITED. Designated areas and trails where the use of off-road vehicles is subject to restrictions such as limiting the number or types or vehicles allowed, dates and times of use (seasonal restrictions), limiting use to existing roads and

trails, or limiting use to designated roads and trails. Under the designated roads and trails designation, use would be allowed only on roads and trails that are signed for use. Combinations of restrictions are possible such as limiting use to certain types of vehicles during certain times of the year.

CLOSED. Designated areas and trails where the use of off-road vehicles is permanently or temporarily prohibited. Emergency use of vehicles is allowed.

OOLITE. Limestone composed of minute rounded concretions resembling fish roe, in some places altered to ironstone by replacement with iron oxide.

OVERMATURE. That period in the life cycle of stands of trees when growth is declining.

PALEONTOLOGY. A science dealing with the life of past geological periods as known from fossil remains.

PERCOLATION. Downward movement of water through soils.

PETROGLYPH. A figure, design, or indentation carved, abraded, or pecked on a rock.

PHYSIOGRAPHIC REGION. An extensive portion of the landscape normally encompassing many hundreds of square miles which portrays similar qualities of soil, rock, slope, and vegetation of the same geomorphic origin.

PIONEER. The initial or establishing biotic community in the plant succession.

PRODUCTIVE FOREST LAND. Forest land that is capable of yielding at least 20 cubic feet of wood per acre per year of any tree species.

PYROCLASTIC. Composed chiefly of fragments of volcanic origin, as agglomerate, tuff, and certain other rocks.

PUBLIC LAND. Land administered by the Bureau of Land Management.

RAPTOR. Birds of prey with sharp talons and strongly curved beaks; e.g., hawks, owls, vultures, eagles.

RECREATION DAY. The presence of one person on an area of land or water for the purpose of engaging in a recreational activity during all or part of a calendar day.

RECREATION MANAGEMENT AREA. Area of public land that is the basic land unit for recreation management.

RECREATION OPPORTUNITY SPECTRUM (ROS). A continuum used to characterize recreation opportunities in terms of setting, activity, and experience opportunities. (See Appendix E for description of specific classes.)

RILL. A small (less than 6 inches deep) intermittent water course with steep sides.

RIPARIAN. Situated on or pertaining to the bank of a river, stream, or other body of water. Normally used to refer to the plants of all types that grow rooted in the watertable of streams, ponds, and springs.

SCENIC QUALITY. The degree of harmony, contrast, and variety within a landscape.

SEDIMENT YIELD. The amount of sediment given up by a watershed, ordinarily expressed as tons, acre-feet, or cubic yards of sediment per unit of drainage area per year.

SEED TREE CUTTING. An even-aged silvicultural system commonly used in the woodland type. The old stand is harvested in one entry; varied number of trees are left unharvested to provide a seed source for natural regeneration.

SELECTIVE CUTTING. Removal of mature timber, usually the oldest or largest trees, either as single scattered trees or small groups at relatively short intervals by means of which the continuous establishment of natural reproduction is encouraged and an uneven-aged stand is maintained.

SHELTERWOOD CUTTING. An even-aged silvicultural system in which, in order to provide a source of seed and protection for regeneration, the old crop is removed in two or more successive cuttings.

SOIL ASSOCIATION. A mapping unit used on general soil maps, in which two or more defined taxonomic units occurring together in a characteristic pattern are combined.

SOIL PRODUCTIVITY. The capability of a soil to produce a specified plant or sequence of plants under a specified system of management.

STAND. An aggregation of trees or other growth occupying a specific area and sufficiently uniform in composition (species), age, arrangement, and condition to be distinguished from the forest or other growth on adjoining areas.

SUITABLE COMMERCIAL FOREST LAND. Commercial forest land determined to be suitable for timber production based on the timber production capability classifications and multiple-use (resource management plan) constraints.

SUITABLE WOODLAND. Woodland having the ability to provide wood products and not withdrawn from such use.

SURFACE FACILITIES. All structures such as drill pads, buildings, well heads, and so forth, commonly used in the production of oil and gas.

SUSPENDED PREFERENCE. That portion of the total preference that is placed in a suspended category because the preference exceeds the present available livestock grazing capacity. Suspended non-use.

TAXONOMIC. Process of classifying organisms in established categories.

TERRACE. A step-like surface bordering a valley floor or shoreline that represents the former position of an alluvial plain, lake, or seashore.

THREATENED SPECIES. Any species likely to become endangered within the foreseeable future throughout all or a significant portion of its range.

TIMBER PRODUCTION CAPABILITY CLASSIFICATION (TPCC). The process of partitioning forest land into major classes indicating relative suitability to provide timber on a sustained-yield basis.

TOTAL PREFERENCE. The total number of animal-unit months of livestock grazing on public land apportioned and attached to base property owned or controlled by a permittee or leasee.

TOTAL SUSPENDED PARTICULATES (TSP). All solid or semi-solid material found in the atmosphere less than 500 microns in size.

UNALLOTTED ALLOTMENT. Allotment where a previous permittee has relinquished preference or BLM has cancelled preference. Not currently used by livestock.

UNSUITABLE COMMERCIAL FOREST LAND. Commercial forest land determined to be unsuitable for timber production based on the timber production capability classifications and multiple-use (resource management plan) constraints.

UNSUITABLE WOODLAND. Woodland withdrawn for uses other than production of wood products based on the timber production capability classifications and multiple-use (resource management plan) constraints.

VEGETATION MANIPULATION. Alteration of present vegetation by using fire, plowing, spraying, or other means to manipulate natural successional trends.

VEGETATION TYPE. A plant community with immediately distinguishable characteristics based upon and named after the apparent dominant plant species.

VERTEBRATE. An animal having a backbone or spinal column.

VISITOR DAY. The presence of one or more persons on an area of land or water for the purpose of engaging in one or more recreational activities for a period of time aggregating 12 hours.

VISUAL RESOURCE. Land, water, vegetation, animal, and other visible features.

VISUAL RESOURCE MANAGEMENT (VRM). The planning, designing, and implementation of management objectives to provide acceptable levels of visual impacts for all BLM resource management activities.

VISUAL RESOURCE MANAGEMENT CLASSES. The degree of acceptable visual change within a characteristic landscape. A class is based upon the physical and sociological characteristics of any given homogeneous area and serves as a management objective.

CLASS I areas (preservation) provide for natural ecological changes only. This class includes primitive areas, some natural areas, some wild and scenic rivers, and other similar

sites where landscape modification activities should be restricted.

CLASS II (retention of the landscape character) includes areas where changes in any of the basic elements (form, line, color, or texture) caused by management activity should not be evident in the characteristic landscape.

CLASS III (partial retention of the landscape character) includes areas where changes in the basic elements (form, line, color, or texture) caused by a management activity may be evident in the characteristic landscape. However, the changes should remain subordinate to the visual strength of the existing character.

CLASS IV (modification of the landscape character) includes areas where changes may subordinate the original composition and character; however, they should reflect what could be a natural occurrence within the characteristic landscape.

CLASS V (rehabilitation or enhancement of the landscape character) includes areas where change is needed. This class applies to areas where the landscape character has been so disturbed that rehabilitation is needed. This class would apply to areas where the quality class has been reduced because of unacceptable intrusions. It should be considered an interim short-term classification until one of the other classes can be reached through rehabilitation or enhancement.

URBAN. Extensively developed residential or industrial areas where VRM objectives are not assigned.

VISUAL SENSITIVITY. Degree of concern expressed by the user toward scenic quality and existing or proposed visual change in a particular characteristic landscape.

WICKIUP. A frame hut covered with matting, board, or brush.

WILDERNESS. An area formally designated by Congress as a part of the National Wilderness Preservation System.

WILDERNESS CHARACTERISTICS. The definition contained in Section 2(c) of the *Wilderness Act* (78 Stat. 891).

WILDERNESS STUDY AREA. A roadless area having wilderness characteristics and, thus, having potential as a wilderness.

WOODLAND. Land producing trees that are typically utilized as nonsawtimber products and sold in units other than board feet. Woodland is that forest land that is not included in the commerical forest land allowable cut base. Woodland can include both commercial and noncommercial forest land. Pinyon pine, juniper, aspen, and subalpine fir comprise the woodland type in the Glenwood Springs Resource Area.

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LITERATURE CITED

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